

National Day of Prayer and Remembrance Today

MIT's
Oldest and Largest
Newspaper



The Weather
Today: Rain, 63°F (17°C)
Tonight: Slowly Clearing, 50°F (10°C)
Tomorrow: Sunny, 65°F (18°C)
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Volume 121, Number 43 Cambridge, Massachusetts 02139 Friday, September 14, 2001



Jonathan T. Wang—The Tech
The word "peace" appeared Wednesday afternoon outside of Lobby 7, covering the call to "victory" erected overnight.

Free Speech Debate
Focuses on Posters
Decrying U.S. Policy

By Eric Berry

A Lobby 7 drop poster comparing U.S. militarism against civilians abroad to recent attacks on the World Trade Center and the Pentagon has become the focal point of a free speech debate on campus. The poster, which was put up by MIT's chapter of Refuse and Resist, was torn down by a local construction worker, said Anton Van Der Ven, a postdoctoral associate actively involved in the group. When a female member of the group who was guarding the poster tried to intervene, the construction worker allegedly told her, "We should kill them all, and kill you, too," Van Der Ven said. The poster condemned Tuesday's attacks on New York City, the Pentagon, and Pennsylvania, going on to say, "This tragedy reminds us of the

impact of U.S. policy on civilians in other lands. ... Our government's response must make it clear that this nation will no longer target civilians. This means an end to all military aid to countries like Israel, Colombia, and Turkey." The poster was subsequently put back up, and the group contacted the Campus Police, "who have been very supportive" of the group's right to free speech, Van Der Ven said. Brice C. Smith G, another active member of Refuse and Resist, defended the poster, saying that "a line has to be drawn between speech that is offensive and that which is harassment."

Student reactions mixed
Students passing by Lobby 7 questioned the poster's appropriateness. "There's a

Free Speech, Page 17



Jonathan T. Wang—The Tech
Students read notes written on the walls of Lobby 10. The paper banners serve as a memorial for those lost in Tuesday's tragedy.

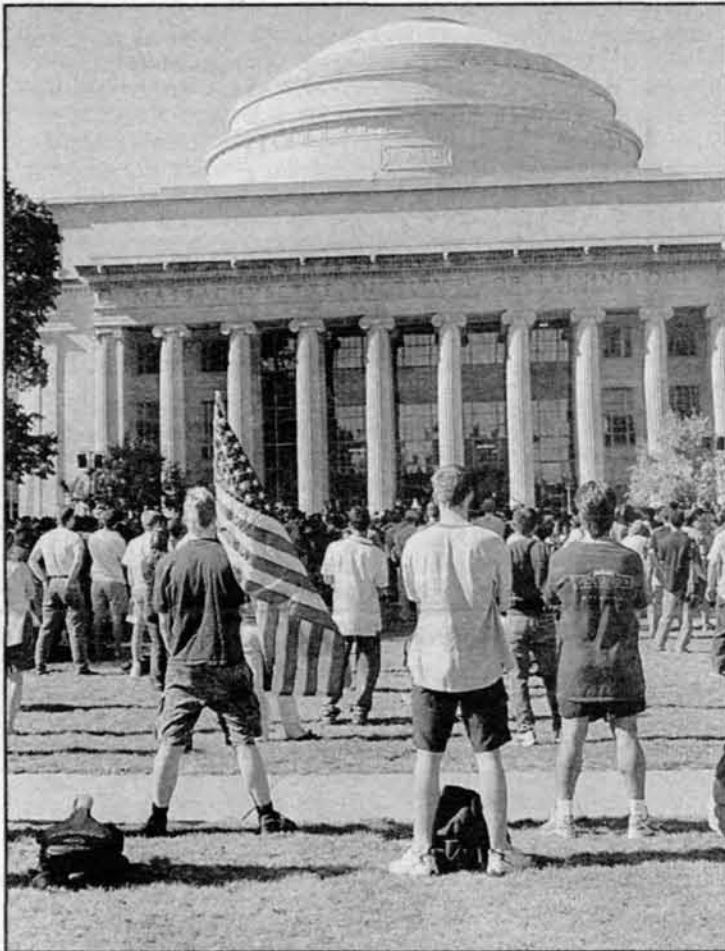
Community Gathers in Killian
Forum Brings Thousands Together for Reflection, Discussion

By Dana Levine
EDITOR IN CHIEF

Students, faculty, and other members of the MIT community gathered on Killian Court Wednesday to reflect upon Tuesday's tragedies in New York, at the Pentagon, and in Pennsylvania. Chancellor Phillip L. Clay PhD '75 called the gathering in order to bring the MIT community together for the first time since the tragedy. "At 3:00 pm in Killian court, the entire MIT community — students, faculty, and staff — is invited to assemble to share our feelings, support each other as members of the community, and draw strength from our common sense of purpose and caring," Clay said on Tuesday evening in a letter to the MIT community. The gathering began with the playing of a musical passage by Gustav Mahler, which was followed by a short speech delivered by Clay. "It is important to share our thoughts, and to draw on the strength of a community united," he said. "The greatest benefit will come from your talking to each other, and not from anything coming from this podium." Clay said that members of the MIT community should take care not to sublimate blame for the tragedy on each other. "There has already been a small trickle of hateful communication directed at members of our community," he said. "We have the responsibility to support each other, and the diversity our community represents." Following Clay's address, Rev. Amy McCreath led the community in a minute of silence honoring those who lost their lives on Tuesday. Stephen C. Graves, professor of management and chair of the faculty,

delivered a short address, which was followed by brief speeches given by Undergraduate Association President Jaime E. Devereaux '02 and Graduate Student Council President Dilan A. Seneviratne. Seneviratne spoke about how many of the international students and faculty have lived through terrorism in their home countries. "I know there are many international staff, students, and faculty who have been

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Michelle Povinelli—The Tech
Chancellor Phillip L. Clay PhD '75, Professor of Management and Chair of Faculty Stephen C. Graves, and UA President Jaime E. Devereaux '02 addressed Wednesday's assembly on Killian Court.

Students Get Laptops for Coursework

By Shankar Mukherji
ASSOCIATE SCIENCE EDITOR

The MIT Council on Educational Technology (MITCET) has initiated a program to distribute laptop computers to students as part of an experiment aimed at assessing the educational impact of a mobile computing environment. "The desired outcome of this experiment," says a document produced by MITCET, "is to determine and measure the pedagogical and learning benefits of wireless, mobile computing in education." The departments of Civil Engineering, Mechanical Engineering, Architecture, and Physics are offering courses which make use of the mobile computing grants. "The Council was looking at ways the MIT educational experience needed to change," said Director of Academic Computing M. S. Vijay Kumar.

According to Kumar, much of the discussion surrounding pedagogical innovation centered around "more flexibility in educational delivery that supports collaborative education, active learning, and that is not reliant on the physical location of machines." The program is being jointly run by Academic Computing and the Computing Practices Resource Team (CPRT). "There are 250 machines in the project," said Kyle E. Pope, team leader of CPRT. "And 125 of them, to be used for Introduction to Computers and Engineering Problem Solving (1.00) and Mechanics and Materials I (2.001), were donated by the Hewlett-Packard Corporation. "That adds up to something like half a million dollars of grant aid," Pope said. "The remaining funds are from MITCET, which [ultimately] comes from the Alex and Brit

d'Arbeloff Fund for Excellence in MIT Education." Courses tailor laptop use to fit needs "Students [except for those in the Technology Enabled Active Learning program] will get the laptop, a wireless card, a case, and the computers will be registered with [stopit@mit.edu]," Pope said. StudioMIT (Architecture) and 2.001 students will be issued individual laptops for their personal academic use. "Architecture students will be using [the laptops] for CAD-CAM (computer-aided design and computer-aided manufacturing) development, on-site work at construction building projects, and ultimately developing portfolios of their architectural work," said Phillip

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President Vest discusses future science policy.

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OPINION

Michael Borucke denounces the call for violent retaliation.

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WORLD & NATION

With World Attention on America, Israel Launches Military Offensive

THE WASHINGTON POST

JERICHO, WEST BANK

With the world's attention diverted by terrorist attacks in New York and Washington, Israel has launched a military offensive in Palestinian-controlled territory in the West Bank and Gaza Strip that has killed a dozen Palestinians in the last three days.

A spokesman for the Israeli army said the operations, including deep incursions by columns of tanks, were intended to "eliminate terrorist activities," including drive-by shootings. But independent Israeli analysts and Palestinians said Israel is taking advantage of the terror attacks in the United States to carry out raids that might otherwise have attracted criticism from abroad.

Not only was there practically no condemnation from Europe or the United States, but the raids received little attention in the Israeli media as well.

In the latest operation, a column of Israeli tanks accompanied by infantry roared into the sleepy Jordan Valley town of Jericho before dawn Thursday, triggering a smattering of opposition by Palestinian gunmen. The two houses in Jericho hit by Israeli tank shells are around the corner from the home of Saeb Erekat, a top Palestinian peace negotiator. Erekat, a moderate who maintains close relations with a wide variety of high-ranking Israeli officials, said the Israeli attack was unprovoked.

He said Israeli Prime Minister Ariel Sharon is taking advantage of Washington's focus on the aftermath of the murderous attacks in America. "He's using this for two things," Erekat said. "First, to do whatever he wants without anybody watching him. Second, he's trying to package this for the world as if he is fighting terrorism."

By midday Thursday, the army had withdrawn its forces from the centers of Jenin and Jericho but remained in positions on Palestinian territory at the perimeters.

New Trade Agreement with Mexico Moves China Closer to the WTO

LOS ANGELES TIMES

MEXICO CITY

One of the last obstacles to China's entry in the World Trade Organization was overcome Thursday when China and Mexico reached agreement in Geneva on their trade differences.

The principal remaining barrier is China's alleged preferential treatment of U.S. insurance giant American International Group, which has provoked the European Union's ire. But trade experts are optimistic it will be settled by the WTO ministerial meeting in Qatar in November, when China's admission is expected to be formalized.

Mexico has been slow to agree with China because of concerns for its apparel, toy and shoe industries, which will have a difficult if not impossible time competing against Chinese imports on equal footing.

Terms of the Thursday's agreement, which came during a WTO meeting in Geneva, seem to indicate a Mexico victory. The nation can keep duties in place for at least six years, with an extension if it can prove Chinese dumping persists. The Mexican government said Thursday's agreement gives Mexican companies better access to China's markets.

China's long-awaited admission to the 142-nation WTO has depended on bilateral accords with all major countries, deals that have followed rapidly since it and the United States came to terms in Spring 2000.

Chinese negotiators must also contend with recent signs of domestic dissatisfaction with the WTO. Employees of China's state-owned companies are worried that the WTO deals that their government has struck will cost them their jobs in protected industries that will soon face competition.

Powell Asks Pakistan for Help In Finding Fugitive bin Laden

By Steven Mufson and Alan Sipress

THE WASHINGTON POST

WASHINGTON

Secretary of State Colin Powell Thursday pointed to wealthy Saudi exile Osama bin Laden as a prime suspect in the attacks on Tuesday by airplane hijackers and later spoke by telephone with Pakistan's leader to insist on his help in hunting down the fugitive militant and uprooting his network.

"We are looking at those terrorist organizations that have the kind of capacity that would have been necessary to conduct the attack that we saw," Powell said. "We haven't yet publicly identified the organization we believe was responsible. But when you look at the list of candidates, one resides in that region." When asked by a reporter, Powell confirmed he meant bin Laden.

Powell said that as soon as the United States is certain of the identity of the culprits in the hijackings, "We will go after that group, that network and those that have harbored, supported and aided that network, to rip that network up."

He added, "When we are through with that network, we will continue with a global assault against terrorism in general."

ism in general."

The focus on bin Laden and his bases in Afghanistan has driven much of the Bush administration's diplomatic efforts to rally support for possible military strikes in retaliation for Tuesday's attacks.

Deputy Secretary of State Richard Armitage, meeting with senior Pakistani officials for the second day, made several demands, including that Pakistan close its border with Afghanistan, cut off fuel supplies to the Taliban and grant overflight rights to U.S. military aircraft, administration officials said. The United States is also looking for intelligence cooperation.

Though the Bush administration has expressed grave concern about the safe haven provided to bin Laden by the Taliban movement ruling most of Afghanistan, U.S. officials said they were unaware of any official American discussions with the Taliban about terrorism since the attacks on Tuesday.

"We have ways of talking to them and we're exploring those ways now," Powell said. State Department officials said the administration could contact the Taliban through their representatives in Islamabad, New York or a few other foreign

cities. The United States does not recognize the Taliban and does not have diplomatic relations with them.

But an aggressive diplomatic campaign has also won the United States support from a range of international organizations, including a resolution of support adopted 56-1 by the U.N. General Assembly. The U.N. Security Council has also signaled its readiness to take steps in response to the attacks.

Despite efforts to build an international coalition, Powell said the administration would not let this tie its hands as it sought to pursue terrorists and states that support them. "We will not do it in such a way that if the United States feels a need to act alone by itself, we will not be constrained by the fact that we're working with others as well," he said.

The ultimate goal is to build international momentum for a sustained confrontation with terrorist groups and governments that provide them support and haven. "What we don't want to do is to have a quick burst, while everybody is focused on what happened, and then lose sight of the fact it's going to take some time to root out terrorism," the senior administration official said.

Officials in Arab States Pledge Support for U.S. Investigation

By Howard Schneider

THE WASHINGTON POST

CAIRO, EGYPT

Officials in Saudi Arabia, Egypt and Jordan pledged that their intelligence and police services will help U.S. investigators seeking to determine who was behind Tuesday's attacks in New York and Washington. U.S. officials have said their suspicions are focused on the Afghanistan-based network of the accused Saudi terrorist Osama bin Laden and, according to U.S. reports, investigators are interviewing men who are apparently of Saudi Arabian and Egyptian origin and may be bin Laden followers.

"We agree that this is an attack against us all," said Jordanian Foreign Minister Abdullah Khatib, whose

country in late 1999 foiled a plot by bin Laden associates. But he added: "We will need to exert effort to draw lines between the issues terrorism and the struggle for independence on the part of different people."

Throughout the Arab world, denunciations of the attacks have mounted in the last two days, with secular leaders, Muslim clerics and even fundamentalist groups denouncing what happened as an offense to Islam.

"If such attacks were carried out by a Muslim ... then we, in the name of our religion, deny the act and incriminate the perpetrator," said Sheikh Yusuf Qaradawi, a Qatari-based conservative cleric who has been among the most outspoken critics of U.S. support for Israel.

But regional analysts and govern-

ment officials agreed there may be limits to what Arab states can or are willing to do on America's behalf at a time when shock over the attacks is offset by anger over American support for Israel and what is seen as unjust punishment against Iraq.

Even as they pledged help in figuring out what happened in New York and Washington this week, regional allies stopped short of commitments for future military action.

Dismantling bin Laden and his organization or even toppling the Taliban would leave untouched groups like Hezbollah, the Shiite Muslim movement in Lebanon; or Damascus-based organizations such as the Democratic Front for the Liberation of Palestine that have contributed to Palestinian attacks on Israel.

WEATHER

A Taste of Autumn

By Nikki Prive

A cold front moved through the area overnight, bringing with it a chilly rain. Showers will end this afternoon, and a region of high pressure will preside over the region all weekend. Fair, cool weather will linger into the beginning of next week, with daytime temperatures slowly increasing to the low 70s (22°C) by the middle of next week.

There are currently three named tropical storms in the Atlantic region. Hurricane Erin, located in the North Atlantic and weakening, is expected to pass near Newfoundland in the next few days. Hurricane Felix, located in the middle of the Atlantic Ocean, is heading north with maximum sustained winds of 105 mph (170 kph), and may continue to strengthen. Tropical Storm Gabrielle, in the Gulf of Mexico, has brought heavy rains to Florida over the past few days, and is expected to strengthen to hurricane force before it makes landfall this weekend, but forecast models are uncertain as to the path of the storm.

Warm temperatures prevail across much of the southern and western portions of the country today, with rain and cooler temperatures in the northern plains and across the Northeast as far south as Washington DC. The Midwest will be sunny but cool, with temperatures in the 60s (20°C).

Extended Forecast

Today: Rain to start, ending during the afternoon. High near 63°F (17°C).
Tonight: Slowly clearing, low around 50°F (10°C).
Saturday: Sunny, high around 65°F (18°C), lows in the mid 40s (7°C).
Sunday: Sunny, high in the upper 60s (20°C), low around 50°F (10°C).
Monday: Sunny, high around 70°F (21°C).

Situation for Noon Eastern Daylight Time, Friday, September 14, 2001



Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
H High Pressure	--- Trough	Snow * Rain ∇	Fog ☁
L Low Pressure	— Warm Front	Light * Moderate ** Heavy ***	Thunderstorm ⚡
§ Hurricane	▲ Cold Front		Haze ☁
	— Stationary Front		

Compiled by MET
Meteorology Staff
and The Tech

With World in Chaos, bin Laden Establishes Base in Indonesia

By Richard C. Paddock
LOS ANGELES TIMES

JAKARTA, INDONESIA

Osama bin Laden, suspected of masterminding Tuesday's attacks in New York and at the Pentagon, has begun operating in Indonesia where social chaos and rising Islamic fundamentalism provide a rich recruiting ground, authorities said.

Bin Laden, sought by the United States for his alleged role in the 1998 bombing of two embassies in Africa, is believed to be planning a terrorist attack in Indonesia, officials said.

Intelligence officials also believe the bin Laden organization might seek to use the vast, unruly Indonesian archipelago as a staging area for attacks in other countries.

"We have known for quite some time that the bin Laden group has established itself in Indonesia," said a senior Western diplomat said this week. "I think they see real opportunities in the world's biggest Muslim country and one in which there are no effective controls."

Islamic fundamentalism has found many new supporters in Indonesia since 1998, when the downfall of Suharto ended more than three decades of military dictatorship. Lt. Gen. Kiki Syahnakri, deputy chief of the Indonesian army, warned recently that international terrorist activity is likely to escalate in Indonesia, a sprawling country of 17,000 islands.

During the 1990s, bin Laden is

believed to have funneled money to the Moro Islamic Liberation Front in the southern Philippines and trained some Indonesians there along with Filipinos. Over the past year, fighters from Afghanistan with alleged links to bin Laden have traveled to Indonesia's Maluku islands to join forces with Laskar Jihad, an extremist Indonesian Islamic group that is seeking to drive Christians from the region.

Nearly 90 percent of Indonesia's population is Muslim and many officials find it difficult to take firm action against Islamic extremists, including Laskar Jihad, which has sent more than 4,000 fighters to the Malukus and operates there virtually unchecked.

Pentagon Authorities Plan to Call Army Reserve Force to Active Duty

By Bradley Graham
THE WASHINGTON POST

WASHINGTON

The Pentagon plans to call several thousand reservists to active duty in the next few days in what defense officials said Thursday would likely mark the start of a much larger military mobilization in the wake of Tuesday's terrorist strikes.

The initial call-up will focus on reservists with "specialized skills," according to a senior military official. He said many of the extra personnel were necessary to support combat air patrols over major metropolitan areas instituted this week. They will fill out the ranks of pilots, aviation maintenance crews and air

traffic controllers. The Pentagon has the authorization to call about 40,000 reservists, the official said.

The Pentagon move represents the first significant federal call-up. And because major U.S. military actions almost invariably require reservists to supplement regular troops, Pentagon estimates of the number of reservists likely to be summoned in the weeks ahead range in the tens of thousands.

As President Bush and his top national security aides were reported reviewing retaliatory options, several high-ranking Pentagon officials said Thursday they expected the U.S. military response this time would be far more aggressive and

require a larger force than the limited attacks that have characterized past American reactions to terrorist attacks. This time, military officials said, Bush and his advisers appear ready to consider the use of ground troops, particularly special forces. More generally, they said administration officials are inclined to give greater weight to employing military force rather than treating the matter largely as a police action.

At the same time, military officials knowledgeable about the extent of Pentagon preparations characterized the planning as still in the early stage. They said no specific targets had been selected and no forces yet earmarked for action.

President to Visit New York City

NEWSDAY

WASHINGTON

President Bush plans to visit New York City Friday to view the ruined World Trade Center towers and, he said, to "thank and hug and cry with" survivors and rescue workers.

During a telephone call Thursday, Bush accepted an invitation from New York Gov. George Pataki and New York City Mayor Rudolph Giuliani to come to the city.

"I can't tell you how sad I am, and America is, for the people of New York City and the tri-state area," he said during the conversation.

He said he looks forward to personally thanking the people there who "made a huge display, for the world to see, of the compassion of America and the bravery of America."

Bush told Pataki and Giuliani that he would begin the trip after a service at the National Cathedral on what he has declared a national day of prayer and remembrance.

Buildings Nearby Trade Centre Show Signs of Structural Instability

NEWSDAY

NEW YORK

As rescue workers furiously dug for survivors Thursday, they toiled in the shadow of structurally unstable buildings shattered by the collapsing twin towers.

The Mayor's Office of Emergency Management confirmed Thursday that World Trade Center buildings 7 and 5 and the Marriott Hotel have been destroyed. But more than 10 buildings forming a ring around the World Trade Center complex have also sustained heavy damage, including the Millennium Hotel, One Liberty Plaza, and Three Financial Center. Thursday afternoon, rescue workers were temporarily repositioned away from the latter two buildings out of fears that they would collapse.

Paul Wein, press secretary for the New York City Department of Buildings, said teams of workers were scrambling to ensure the stability of buildings surrounding the epicenter as quickly as possible.

John Filson, manager of the U.S. Geological Survey's Earthquake Hazards Program in Reston, Va., said the World Trade Center's foundations were based in granite bedrock, "which is about as solid a rock as you can get."

The three heavily damaged buildings of the World Financial Center, however, were built on 14 acres of landfill in Battery Park City, some of which came from dredging for the World Trade Center's construction.

Nevertheless, Filson and other seismologists and civil engineers agreed that the instability of buildings around the World Trade Center likely resulted from fire and falling debris instead of the relatively small seismic impact of the collapsing twin towers. Although not familiar with the specific damage to the surrounding buildings, Filson said debris spreading out from the collapse could have destabilized them by damaging the load-bearing members of their frames.

NEW! evening appointments

Internal Medicine

M T W Th

Mental Health

M T W Th

Dental

M W

Allergy

M

Eye, Pediatrics, Dermatology

T

X-ray/Mammography

T

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5-7pm starting September 17



MIT Medical/ Cambridge

OPINION

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The Tech (ISSN 0148-9607) is published on Tuesdays and Fridays during the academic year (except during MIT vacations), Wednesdays during January and monthly during the summer for \$45.00 per year. Third Class by The Tech, Room W20-483, 84 Massachusetts Ave., Cambridge, Mass. 02139. Third-Class postage paid at Boston, Mass. Permit No. 1. POSTMASTER: Please send all address changes to our mailing address: The Tech, P.O. Box 397029, Cambridge, Mass. 02139-7029. Telephone: (617) 253-1541, editorial; (617) 258-8329, business; (617) 258-8226, facsimile. Advertising, subscription, and typesetting rates available. Entire contents © 2001 The Tech. Printed on recycled paper by Charles River Publishing.

In light of recent events, John Reed's attack on the political and economic foundations of America should serve as a warning to freedom-loving people everywhere.

The price of freedom is eternal vigilance, so it is said. We in the U.S. must remain ever vigilant and ready to defend ourselves, not only against foreign terrorists, but from our enemies within.

Michael E. Rolish '04

Mike Hall's column in Wednesday's extra issue of *The Tech* is way off the mark. While I sympathize wholeheartedly with Mike's feelings, I cannot agree with his call to arms. I was born and raised in New York City and knew the affected area quite well, in fact, my senior prom was at Windows On The World this past June. It is very unsettling to see those towers gone now. My mother and brother and the vast majority of my friends all live in New York. Thankfully, they are all okay, but as Mike says, some were not so lucky. I know what it is like not knowing; I know what it was like to wait for my mother to call me, to be unable to reach anyone in New York by phone because all incoming calls were rejected. I know what it was like to sit in class, wondering what had happened, and to watch the TV feeling powerless. The terror of not knowing. But I disagree with Mike's conclusion. Now is *not* the time to strike back. It is *not* the time for vengeance, for that is the very thing that got us here in the first place. I would venture to say that "they," the perpetrators of this unthinkable crime, have first-hand knowledge of "not knowing," of waiting to hear about their family members. Those dancing in the streets of several Middle Eastern towns certainly had a familiarity with not knowing that we cannot comprehend. Now is the time to look at what went wrong, to look at what happened and what can be done to prevent such a catastrophe in the future. It is not, as some might claim, appeasement to the terrorists, for their goals were very much contrary to peace. They wanted to instill anger and they've done a marvelous job. In the memory of all those who have died, lost their loved ones, friends, jobs, memories, and city landmarks, much like myself, let us now use this disaster to inaugurate an era of peace, not of violence. Revenge is not the solution. Revenge is appeasement; it is the response of the cowardly to the cowardly. We must show these terrorists and the world that we do not stand for violence. That violence is the last resort of the incompetent. We must all stand together against this threat and say we will not allow the destruction to continue. Because killing more people is not the answer. I understand the anger — I felt it myself — but I realize too that those who died would not want the world to be plunged into chaos. What better memorial to them all than a world of peace and security?

J.D. Zamfirescu '05

Caring for patients at MIT, a day does not go by during which I do not worry about the possibility of doing someone a measure of harm while performing surgery. Despite this constant concern, the truth is that I can potentially inflict a lot more harm behind the wheel of a car than I can in the operating room where, at worst, I can injure only one person at a time. On the positive side of ledger, over 30 years of caring for patients one by one, I like to think that I have done some good, alleviated some suffering, and improved the quality of some people's lives. Perhaps I have even saved a few lives by diagnosing some illnesses still in a curable stage.

At this moment, the work of a lifetime seems trifling and insignificant in the face of the

death and destruction that has just been dispensed by a few determined individuals who were not afraid to die in order to make a political statement.

Strange that the new millennium should see both the unlocking of some of the basic secrets of life and also such contempt for the value of it.

I see no defense against such insanity other than to resolve to continue to try to do more good than harm on a day-to-day basis and to recommend this approach to others.

Edward B. Seldin
MIT Medical, Chief of Oral Surgery

I did not find out about the events in New York, Washington and Pittsburgh until I arrived at my lab in Building 13 late Tuesday morning. After absorbing the news from various Web sites, a colleague and I started to discuss various related things, from the wisdom of U.S. foreign policies to the general state of humanity. As our conversation moved into the hall, we noticed a bit of math, a derivation of something, neatly and purposefully written on the hall whiteboard. Our first reaction was to dismiss it as trite in light of the day's tragedy, but then we thought: if everyone could touch such diaphanous beauty as we could, would all this have happened? Sadly, perhaps it is only when mindless acts occur that we most fully realize how precious and jewel-like the human mind is. The World Trade Center was a tremendous Romantic symbol: in purpose, a buzz of human energy as a nexus of commerce; architecturally, a sublime product of the aggregate blood, sweat, tears and genius of a great civilization, yearning skyward — in other words, a temple to the human spirit in New York, the exemplar city of American values. The aggressors chose their target wisely. In the coming time, we can expect much worry and activity concerning national security and retaliation. However, over the long term, perhaps we should examine why that which is so beautiful would be considered so ugly by some. I submit that it is because freedom and intellect are one, and that those who are enemies of one are enemies of the other.

Sourav K. Mandal '00

First of all, my prayers go out to all those who have lost a loved one or are learning of the whereabouts of their loved ones. I myself was numb all day until I could get through to my family and make sure that they were all safe and well. My deepest sympathies for those still unsure of the whereabouts of their loved ones.

But more importantly, I want to thank the professors and teachers for taking the time out to allow the students to ignore their academics, for once, so they could take care of their emotional health and learn the whereabouts of their loved ones. Likewise, I thank those who pushed us to live our lives in the aftermath of such horror and, in turn, defy those who sought to terrorize us. Others immediately marched out to metro-Boston blood donation centers to do their part to save lives, and I think the gratitude of thousands go out to them.

These tragedies are infrequent but serious, and it's truly a great thing to see the Institute band together for strength and support. It was a warming reminder that MIT is not just an Institute, but an entity made up of human beings.

Sandy M. Pae '02

The only thing we have to fear is fear itself. Terrorism aims to cause fear: paralyzing fear that immobilizes societies. Our society, America, cannot submit to fear. We are a mighty people, the strongest the planet has ever seen. The tenets of this nation dictate that we not abandon

the banner of freedom and liberty merely because antagonism is directed against us. We must stand strong, holding high the American flag amidst tragedy, wearing our swords at our sides and drawing them out to strike only when we have ascertained our enemy.

The events of September 11, 2001 will be remembered in our generation. I will never forget my disbelief right before taking a chemistry quiz: a plane had flown into the World Trade Center. It seemed as if suddenly my existence had been taken into an elaborate science fiction plot, and yet it was still reality. As further events of the day unfolded, I watched, awestruck that this could be happening to this nation.

This attack was executed with amazing military precision, striking two major targets within the space of an hour, creating havoc and shutting down much of the government. The principle aim of the terrorists, however, will not be accomplished. America will not withdraw from world affairs, wounded and wary, never to stand again as the light of liberty across the world. Though the Towers smolder in ashes and ruin, Lady Liberty yet holds forth her torch, her eyes filled with tears and her fists clenched in righteous anger.

It is very easy to lose sight of the tremendous loss that our nation has taken. "Thousands of lives" is not just an expression for a number. Each of those lives was not merely a life; each was a thread in the intricate web that is human existence. Each life taken was prematurely ended. America lost an irreplaceable part of itself on September 11, 2001. In dealing with the aftermath, we must remember that these are innocent human beings who have been cruelly slain.

The options of our course of action must be weighed carefully, yet we must not lower ourselves to the level of the terrorists. America cannot find true vengeance by slaying innocent peasants whose government has given safe haven to terrorists. If we do so, then we are no better than the terrorists: brutes who slay innocents without just cause. We are the most powerful nation on earth. Our technology and force exceed that of anything else this planet has ever seen. We have the capability to track down those responsible, apprehend them and bring them to the full force of our justice system. And so that new fanatics will not replace them, we must destroy their operations and supply caches. We will erase their memory from the earth. This we can do. This we must do. This we shall do.

Dominik R. Rabiej '05

After the horrific events of Tuesday, we are unfortunately beginning to hear of backlash from people who are uninformed and unable to contain their feelings. Such backlash has taken place against Sikh men wearing turbans, who the perpetrators assume are instead Muslim. Sikhism is entirely different from Islam, and when you see a man in a turban in this country, he almost certainly is a Sikh, not a Muslim. He may have been born in India or here in the U.S., but he undoubtedly has the same feelings you do: shock, horror, and outrage at the cowards who carried out Tuesday's attacks. There are Sikh members of the MIT community, both in the faculty and staff, and in the student body. Offer your hand of support to your Sikh neighbor, and allow us to offer ours to you. Please become informed, and know that the hearts and prayers of the Sikh community, American and Indian alike, are with the families and friends and with our country.

Gurukarm K. Khalsa
Biology Course Web Designer

Opinion Policy

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An Eye for an Eye

Matt Craighead

Recent events have unfolded like a terrifying scene out of a Tom Clancy novel. America has been attacked, and thousands of American citizens have been killed. As a consequence, the American ideals of freedom and capitalism are under attack as well. We cannot sit and do nothing. Instead, we must seek out those responsible and punish them with the full onslaught of all our might.

Consider the targets: the World Trade Center and the Pentagon. The World Trade Center was not merely an office building; it was the preeminent symbol of American capitalism. It symbolized the stunning wealth accumulated in America over the last two centuries as a result of the Industrial Revolution. The Pentagon, likewise, is not just a military office building. Nor is it merely one of the largest manmade structures on the planet. It represents our country's unmatched military power, and our strength and resolve in defending our interests both at home and abroad.

These attacks were no two-bit operation. Terrorism and intelligence experts have speculated about who might have the necessary resources, and the list is short. The name at the top, of course, is Osama bin Laden, whose group has been responsible for many of the attacks against America over the last decade. (Bin Laden claims that he is not responsible, but he supports the attacks.)

But terrorism is rarely just the work of private individuals. Terrorists often also have the backing of governments which provide them with the military resources they need, as well as the most essential ingredient of all, money. The greatest sponsor of terrorists was once the Soviet Union, but with its collapse, new regimes have stepped in. The countries who sponsor terrorism consist mostly of familiar names: Iran, Iraq, Syria, Sudan, Afghanistan, etc. What they have in common is that they hate America and everything America stands for, and their support of terrorism is a direct consequence of this.

Investigating which groups and what countries are involved or complicit is a distinct issue from the question of retaliation, and I will leave this to others. We should certainly put some effort into investigation, but this is really the least of our problems. The fact of the matter is that this is a declaration of war against America. We have appeased these terrorist nations for far too long, and it's time to change that. Yes, we should attack whoever is responsible for this specific attack, but that's not enough. We need to declare war on and destroy any and all nations that are responsible for terrorism against America, and end this threat for once and for all.

Some pacifists among us might suggest that we should not undertake any military action. "We cannot change what is already done," the pacifist argument goes, "and by retaliating, we merely lower ourselves to the level of our attackers." But the pacifist argument falls short on both moral and practical grounds.

The common sense practical argument for retaliation is simple. If we do not retaliate, we send a message to potential future terrorists

that they will not face any consequences for their actions, encouraging future attacks. Therefore, it is very clearly in our interests to punish those responsible.

The moral argument directly challenges the claims of pacifism. As for the first part of the claim — that the damage has already been done — I fully agree, but that is not the issue. Pacifism attempts to lend a moral equivalence to the initiation of force and the use of force to respond to another's initiation of force. But these are entirely different in nature. It is the difference between unprovoked attack and self-defense. Pacifist claims of moral equivalence are an insult to those of us who value our own lives.

Remember also that the moral answer to terrorism is to recognize that our proper standard of value is our own lives. A person who values his own life above all will never become a suicide bomber or an airplane hijacker. Only someone who accepts the vicious doctrine of altruism, the idea that we must place the interests of others above those of our own, will do such a thing. If these hijackers had placed their lives as their highest value, they would never have sacrificed their lives for their twisted cause in the way they did on Tuesday.

Likewise, we must recognize that those same standards apply to our country and to our shared interests, such as our

national security. We should not listen to the critics who tell us that we ought not engage in unilateral action. We must decide on a rational course of action, and we should consider our allies' thoughts on military proposals. But once we act, if others criticize us, we must hold our resolve. We must never allow the complaints of other

nations to endanger our country's interests.

The choice is clear. We must ask ourselves — do we value our own lives? Do we value America, the freest country in the world? Do we value the fundamentally American and moral economic system of capitalism, symbolized in the World Trade Center, that has led to the unprecedented creation of wealth worldwide? Do we value the American military, the strongest military in the world, a military that has crushed the oppression of so many dictators and so many threats to our nation over so many years?

If our answer is "yes" — and I hope that we all would answer thusly — our reaction follows as a direct consequence. Whoever did this to America, and whoever is responsible for or complicit in the attacks, must be killed. Whatever government is behind the attacks, we must bomb into submission with the full might of our military, and replace with a government dedicated to freedom, democracy, and capitalism. Whatever governments have done this to us in the past — we must do the same.

The cost will be great. American lives will be lost. I fear that this war will escalate beyond our intentions. Indeed, war is never glorious. But, in the words of Julius Caesar, the die is cast. The lines are drawn. The war has begun. All that is left is for you to pick your side. You are either with America or against us. I urge you to side with America and support this war.

Don't Fight Fire With Fire

Michael Borucke

It seems that everyone who appears on TV wants war. The media, the congressmen, the military officials are calling for immediate retaliatory actions. Before the people of this country have begun to mourn, before we even know who was responsible for the attacks, a large military response seems inevitable.

It doesn't matter where or who or how much to strike; just something to cause pain, to cause more destruction, so that we may feel better. But if you think about it, you know that no good can come of more violence. I'm not speaking about turning the other cheek or taking the high ground. Simply, on a rational level, there is no way that more violence will solve anything.

Emotionally, only time can heal our collective grief. The loss that thousands of families have recently endured cannot be assuaged with the loss of more lives. No one will feel better if we annihilate another culture.

Strategically, the call for more violence has no merit. First, we don't know who was responsible for the attacks. There is no hard evidence as

easily. No missile defense system could possibly have stopped the attacks. My question is, how will spending more on what didn't work in the first place help to ensure that this doesn't happen again?

Congressmen are already pushing for more spending on missile defense. The US is the most heavily armed nation in the world, but no missile defense system could have possibly prevented the attacks.

It's not altogether a surprise that attacks of this sort could happen again. That's where our fear and our insecurity come from. What do we as a society do to ensure our security? Do we support more violence? Do we find security in the suspension of our civil liberties? Do we okay the reallocation of education and social security funds to defense? We have to do something to feel safe, it's a natural human instinct, but is bombing another country the answer?

Maybe we can begin by trying to understand what happened, and why it happened. If we can understand the motivations behind the crimes, we may find a peaceful and affective way to stop future attacks. To do this, we cannot simply demonize those we perceive to be our enemy. We cannot point and say, "EVIL," because that's not understanding; that's simply propaganda meant to make killing a whole lot easier on the conscience. Instead of asking what kind of monster could do something like this, we should ask what could drive another human being to act with such deplorable behavior.

Understand that I'm not trying to justify Tuesday's attacks. They were despicable acts of human behavior, and those perpetrators who are still living should be brought to justice. Nor do I mean to lessen the importance of the suffering of the victims and their families. I still feel sick about what happened to those people. But the current atmosphere of war and death is simply not the path to healing.

The loss that thousands of families have recently endured cannot be assuaged with the loss of thousands of more lives.

of yet, and no one has claimed responsibility. This has not stopped speculation and the subsequent preparations for retaliation. If the persons responsible are found, and the U.S. does retaliate, it will no doubt cost the lives of many innocent people, as it has in previous wars. Secondly, many politicians have said we must use force as deterrence "to make sure people understand the U.S. will not tolerate this."

How can a person or group ready to commit suicide possibly be deterred by violence? They can't be. The only effect of U.S. retaliation will be to provoke further attacks.

It's obvious that we can't defend against these attacks either — even with our enormous arsenal, we could not stop the attacks. Nevertheless, congressmen are already using this tragedy to push for more spending on defense, and specifically on missile defense. But greater defense as a deterrent is ludicrous. The criminals knowingly and intentionally attacked the United States, the most heavily armed nation in the history of mankind. Not only did this not deter the criminals, but their heinous acts were carried out quite

At home, the culture of fear and violence that could potentially erupt because of hard-line actions abroad is very disheartening. Already I've heard stories of Americans being attacked because of the color of their skin. At this

school, e-mails expressing racism and hatred have begun circulating. We have to remember how insignificant, and at the same time, how important we all are. We all live on a this planet together, surrounded by the vacuum of space, and in the end, we are all we have. It sounds novel and trite, and there's little chance anything can come of it, but I don't know what else to say — peace.



In the Name of Self-Defense

Guest Column
Nida Rizwan Farid

Let me state at the start that I, my friends, and my relatives, completely condemn these attacks. They were brutal, scary, and completely heartless. I can't imagine the state of mind of the poor passengers who were on those planes. The terror, hopelessness and desperation that must have been in their hearts when they saw their planes aimed head on for the world trade center. Whenever I hear the account of the couple who jumped from the towers holding hands, I break down crying thinking of how defeated they and the many other people who jumped from the towers to certain death must have felt, to jump from a 120 floor building knowing that there was no chance of survival.

I have visited New York City many, many times. My brother used to live there till about a year back. In fact, I was in the city a couple of weeks ago, visiting my uncle, who was in from Sri Lanka. He had rented an apartment half a block away from the twin towers. I was in the towers daily, window-shopping with my cousins and aunts. Over the past 2 1/2 years, I have visited the sky lobby at least 4 times with my friends. I have so many memories associated with those buildings and the surrounding areas. And to see those beautiful buildings crumbling to the earth was heart-breaking. It is hard to accept that the World Trade Center is no more.

I know the popular opinion is that Muslim terrorists were responsible for this attack. While we don't know yet if that is true or not, it is very important for people to realize that whoever did this was not doing it for Islam.

Even if it turns out that those responsible for these attacks were "Muslims," they were not practicing Islam. Islam is a religion of peace; Muslims are only allowed to fight back in self-defense. And self-defense does not include killing innocents. There were many women (some pregnant), and children in that building. It is mentioned in many places in the Holy Quran, that whoever kills an innocent believer will go straight to hell in the afterlife. And there were many, many believers (Muslims and others) working in those buildings and the surrounding areas. Under no circumstances would an action like this ever be acceptable in Islam.

It is also important that this situation be contained. In the aftermath of the Oklahoma bombing, many Muslims suffered harassment at the hands of other civilians. It was later discovered that Muslims were not responsible for

this attack. But the suspicion and bitterness left by this treatment was hard to forget. After the American Embassy bombings in East Africa, not enough time was given to investigation. The next thing we knew, the U.S. had sent planes to bomb factories in Sudan, which turned out to be chemical factories, killing many innocent civilians.

Understandably, the outrage at these acts is strong. Everyone around the world is outraged, as am I and all my Muslim friends and relatives. Do not take this act of cold-blooded killers to be synonymous with Islam, or even most Muslims. My prayers are with all those who suffered losses in these attacks. May God help us through this horrible time of grief and mourning, with patience and forbearing. God bless you all.

Nida Rizwan Farid is a member of the Class of 2001.

Bursting the Bubble of Innocence

Guest Column
Jonathan T. Wang

Readers, I have a confession to make. This is not the column I had in mind when I claimed space in today's *Tech*. Originally, I had written seven hundred words condemning the second housing lottery and moaning about the incompetence of the Office of Residential Life and Student Life Programs. But as I sat down Tuesday to revise that column, I couldn't continue in light of the gross self-centeredness staring at me from the page.

It is easy to become lost in the sea of misfortunes and inconveniences of everyday life. There are infinitely many pedestrian troubles that seem all-encompassing when they occur. They may merely annoy us — having a class scheduled at 9 AM, or a roommate's habits, or rude drivers oblivious to pedestrians in a crosswalk. They may be disappointments or imperfections, such as the many complaints I've heard about the quality and price of Aramark food. They may be the stresses of MIT, the dreaded first 8.01 exam, or the next problem set. In my case, I felt sufficiently injured by the second

housing lottery to condemn it in print. It is easy to lose sight of the priceless intangibles we possess and become lost in the tangible wants of life. It is a shame that it takes some large tragedy to jostle us into thinking about the grand scheme of things.

I have lived a very sheltered life. In just two weeks at MIT, I have learned more about the "real world" than I have in the past seventeen years. I came here thinking that I had seen it all after living on my own for three years in boarding school, but I was sadly mistaken. The people who I have met in this short time have shed some light on what the "real world" is like.

Last week, I realized that I have been fortunate enough to always receive the unconditional support and love of my parents, something that I had always taken for granted. That day — and this wasn't a coincidence — I met someone at MIT whose parents were unloving, critical, and domineering. I watched, helplessly, as my friend cried, searching fruitlessly for how she

could possibly have deserved such treatment from the people that should love her most. Regardless of her achievements and what she has done, she never seems to be able to receive the kind of love from her parents that many of us take for granted.

Additionally, before these past two weeks,

The point of this is to draw attention to the things that we take for granted in life. For me, it took a massive tragedy to draw attention to the pettiness of some of my concerns.

date rape was an academic subject to me. Clearly, it was not my problem, as I didn't know anyone who was affected. Warnings about Rohypnol (roofies) seemed to be extreme and unnecessary paranoia. Meeting someone with a story to tell — and I don't mean Katie Koestner's speech during Orientation — humanized and brought full force to the heinous crime.

Similarly, I used to shrug off high-pitched sirens of racism and prejudice in the United States. Obviously, such things simply didn't happen in our country. As a member of the Chinese minority, I had never experienced anything to be construed as racism in my travels around the U.S., or even around the globe. The rallying cry of diversity seemed to be a hopelessly redundant, politically correct point wholly irrelevant to my life. Then, I met someone here who was terrorized in high school with a cataclysm of anti-Semitism.

The point of this is to draw attention to the things that we take for granted in life. For me, it took a massive tragedy to draw attention to the pettiness of some of my concerns. I am lucky enough to have parents who truly care about me and to have been protected from some of the darker facts of life up until the beginning of my independent life in college. The lives lost Tuesday can never be replaced, particularly not by American retaliation, but perhaps we can all step back from the daily grind and see the invaluable things in life that we fail to notice.

Jonathan T. Wang is a member of the class of 2005.

Responding Like Robots

Guest Column
Shandon Hart

September 11, 2001, was a day that will be indelibly marked in our memories. As of the writing of this letter at 11 AM on September 12, many still do not comprehend the sheer magnitude of the tragedy that has occurred. It is sad that for many MIT students, September 11 will be remembered as a day when business carried on as usual. It is not my primary intent to criticize the administration for its actions in this confusing time, but rather to encourage each of us individually to look inward and reflect on our own feelings and reactions to this stunning event.

The historical significance of this event has been compared to that of Pearl Harbor, and this is one case where the media is not being melodramatic. The one-day death toll will likely dwarf the number of people who have been killed in the ongoing conflict in the Middle East over a period of many months. We are inundated with news drama every day, but we must not let that desensitize us to truly important events when they occur. This may very well be one of the five most significant events in the history of the United States.

While my own observations of students have been limited, the indifference that I have seen among many at MIT speaks volumes about all of us. I have heard that some students did not even fully know about the events until their classes were over for the day, and many certainly did not have time to appreciate the full extent of what was occurring. As we all know, MIT students are normally insulated from the outside world and the events and issues facing humanity on a day-to-day basis. We instead prefer to focus on algorithms, genomic sequences, and band diagrams. This may be okay most of the time, but we should not be so robotic that we do not recognize a world-changing event when it slaps us in the face. While some of our research may eventually help other people, our reaction to this crisis indicates that most of us are motivated primarily by self-interest. MIT as a whole fosters this ignorance and self-absorbance. When we don't even have time to take a break and let the news sink in, how could we expect anyone to appreciate the enormity of this occurrence?

The deadliest attack on U.S. soil since the Civil War has just occurred, and MIT's response has been confused at best. It is understandable for the administration to be confused at a time like this, as many of us are. But we should not expect students to be focused on the normal routine in the face of this tragedy.

The fault does not lie with administrators alone, as many students would apparently prefer to continue with the routine of classes and research. These students should be

encouraged to take a step back and consider how this will affect all of us and what this says about America and the world we live in. MIT has never been a very nurturing or caring institution, and we shouldn't expect that MIT can show its students how to grow and mature. That is not MIT's job.

But MIT can make the choice to give its students some time to reflect, and to interact with peers or loved ones so that we may develop and learn in our own way. Today, more steps are being taken to provide time for mutual support and reflection. How should we use this time? Should we just treat it as a fun day off? Again, it is not my primary intent to criticize the details of the administration's actions, but rather to address the larger question of how we should use this time and how our reactions show our true character. If there is fault in our response, then it lies with each of us individually. Our character is not defined by how well we follow the rulebook. Our character, individually and collectively, is defined by how we respond to situations for which there are no set rules, situations which are unprecedented. So far, many of us have revealed ourselves as automatons,

walking computers who have little feeling about things that don't directly affect our petty experiments. We are unable to process the enormity of an event for which we have no programmed response. What many at MIT may prefer to see as bravery,

as carrying on in the face of terror, is instead a manifestation of ignorant pride, self-absorbance, and fear.

We at MIT are too proud to admit how much this will affect all of our lives, and instead choose to selfishly focus on our problem sets or experiments. In many cases we are too self-absorbed or unfeeling to lend an encouraging word or a listening ear to those around us. And we are afraid to reflect on these events because of what it says about the condition of the world and humanity as a whole. These facts lead to the most important question of all: what is our primary motivation as individuals? It is fine to make altruistic statements, but what truly motivates us on a day-to-day basis?

Our true character is revealed not by our words but by our actions. What is the most important thing in all of our lives? This is a very personal question, but it is a question that is of incalculable importance for each of us to answer. Let us not shy away from this question because we are afraid of the answer. If the answer to this question ultimately finds its roots in pride or self-interest, then the sad truth is that there is little that differentiates our characters from those terrorists who yesterday committed unspeakable acts of horror.

Shandon Hart is a graduate student in the Department of Materials Science and Engineering.

An Inappropriate Response

Guest Column
Philip H. Tang

I am appalled at the way the leadership of this university has handled its affairs after the tragic events on Tuesday. It has sent the message to all faculty, students, and staff, that one day of its normal operations supercedes the importance of grieving with and sharing in the experience of our fellow Americans.

Once I heard the news of the terrorist attacks, I, like so many others, was moved by deep feelings of sorrow, fear, and anger. Were we supposed to put aside these feelings for an hour or an hour and a half at a time to learn about how rigid bodies behave, how molecules interact, and how mathematical expressions can describe our world?

As I left school that morning, I peeked in the windows of some classrooms. To my chagrin, they contained a multitude of students, all concentrating on some teacher writing furiously on a chalkboard. As I walked through the halls, I found students shepherding themselves to their respective classes — some in an obvious state of unease, others seemingly oblivious to their surroundings. This is not the picture of caring and concerned citizens, and the MIT administration is at fault for supporting that behavior.

It is also not constructive for our leaders to send us a mixed message. At the vigil service that evening, one speaker called everyone to not be alone that evening and to make sure no one else was alone so as to discuss our feelings and to bring ourselves together as a community. Yet the message had already been implied during the day that we should continue to isolate ourselves by focusing our attention on our studies and work. It was also said (possibly by a different speaker) that business cannot go on as usual as we must come together in support of each other. But the campus-wide alert sent that morning essentially said that since we are not in immediate danger, to carry on as usual unless you know of someone directly involved in the events.

To further emphasize the administration's mixed signals, even on Wednesday, despite the announcement urging faculty to use class time "to address feelings and issues raised by this difficult time," many classes continued to follow their syllabi.

It is important that everyone on this campus understand that we are part of a larger community. That we work and play, live and die with each other. Thousands of parents and children, husbands and wives, brothers and sisters — our fellow citizens — are missing only because they were at the wrong place at the wrong time. Even if the events were closer to home (and it's hard for them to be any closer than they already are), say at the Hancock and Prudential buildings in Boston, what would the administration have done? Would the policy remain that classes be cancelled only if there was a significant risk to the school? Undoubt-

edly the situations and factors involved in that scenario are different. Yet how different are they? And how different would it be if these events took place somewhere else, like Los Angeles or Chicago? It's scary to even think that the leaders of our school would allow us to isolate ourselves like that.

The most compelling example of what the administration has allowed, and perhaps created, came after it released an announcement for Wednesday's plans. By accident I received an e-mail directed to a professor from a freshman, concerned that because the class was not meeting the following day, her registration status in the class would be compromised. Considering the events that had just occurred, our class schedules, course requirements, and homework should be the least of our concerns. This incident emphasizes to me the notion that this school is composed of predominantly self-interested, insensitive workaholics, and is led by the same type of people. Whether this is true or not, the impression remains.

Compared to the scope and magnitude of the terrorism we have faced, one day of work and class is meaningless. The school should have immediately cancelled all classes on

Tuesday, instructing all non-essential work to discontinue, and encouraging everyone to gather with friends, workmates, and/or loved ones to share in the suffering of our greater community.

There are many individuals who say that we must move on and not let the terrorism disrupt our everyday life, if only just to send a message that we

will not be terrorized. But out of respect for the dead, the dying, and those risking their lives to save them, I refuse to carry myself as though nothing has happened. At some point, I and those who share my feelings will eventually have to. But whether that takes one hour, one day, or one week, is up to that person him/herself. And the MIT community should respect and encourage that. If you are an administrator and are reading this, I urge you to think about the example you are setting for the leaders of our future. I also urge you to discuss among your colleagues the type of atmosphere that you want to provide for our school and how the importance of the work that is done here compares to that. This is certainly not the first time a reaction such as this has been observed.

If you are a student and are reading this, I hope my point is clear, and you share my feelings in some way. I urge you to remember that we are indeed part of a larger community and sometimes we must remove ourselves from the so-called "college bubble." Although our work and education is noble and important, it can be dangerously self-serving. God bless.

Philip H. Tang is a graduate student in the Department of Mechanical Engineering.

We are too proud to admit how much this will affect all of our lives. What many may prefer to see as bravery, as carrying on in the face of terror, is instead a manifestation of ignorant pride, self-absorbance, and fear.

On Tuesday, I saw students shepherding themselves to classes, some in an obvious state of unease, others seemingly oblivious to their surroundings. This is not the picture of caring and concerned citizens, and the MIT administration is at fault for supporting that behavior.

SCIENCE & TECHNOLOGY

INTERVIEW

Vest on Future of Science Policy

By Devdoot Majumdar and
Shankar Mukherji
STAFF WRITERS

At a time when science and technology permeates our daily lives at every level, MIT as an institution finds itself in the spotlight. MIT President Charles M. Vest offered The Tech his insight in the multifaceted realm of science and technology.

The Tech: First things first, what is your take on President George W. Bush's new National Science Adviser, John Marburger?

Charles M. Vest: Talking to people in the physics community, I think they've been very impressed by his ability to make Brookhaven a great place to do science again. He's

tion that we were signatories of a letter with practically every other university in the country simply asking that these guidelines be kept in place for a while.

So I always have to be cautious about the distinction between my views as an individual and views that can be considered as views of MIT as a whole. This is a personal opinion. My personal opinion is that embryonic stem cell research should go forward cautiously and carefully and that society's best interests will be served if it is allowed to go forward under federal funding. I realize that this is a very worthy ethical discussion. This is just one of many questions that modern biology and modern medicine are going to put in front of the country eventually.

TT: As for global warming and the U.S. decision to renege on Kyoto protocol?

CMV: It's unfortunate that a framework has not emerged that the U.S. has felt it can go forward with, with the rest of the world. I have not studied the Kyoto protocol enough to have a firm opinion on it *per se*, but I do believe the vast majority of scientific opinion that we clearly are observing a period of quite substantial warming of the earth's atmosphere. There are still some major questions about the extent to which that is caused by man, but the bulk of the opinion believes that humankind are a substantial factor.

I believe that we must find ways of cutting back on greenhouse gasses. It

is incumbent upon us to use our resources in a more efficient manner. There are many companies in the U.S. that have cut back their emissions below what would be called for by the Kyoto Protocol. So I hope that independent of government policy, the leadership in private industry will begin to take this matter very seriously.

TT: As for President Bush's missile defense plan?

CMV: I don't have a strong personal view on this. I would say two things. First, I really do not have either the technical capability or the technical knowledge base to make a logical statement on the viability of the proposed system. So I simply cannot express an opinion on that.

I've got many things started that I intend to finish over the next few years... MIT has a great voice and a level of independence in trying to deal with national science policy

I do think that this is a very substantial expenditure for the country and that we need to go forward with careful analysis that the seriousness of the potential threats over the coming decade or two.

And secondly, I think that we need to find what the right balance is between worrying about a small number of missiles from rogue nations, which I understand is the primary interest of the NMD, and deal-

ing with other threats that are increasing, such as biological warfare and what is increasingly thought of as urban warfare. I think the general public will see the NMD as an extremely high priority for the nation.

TT: This issue of missile defense has come close to home lately with

The sine qua non of research universities is in fact to deal with truly fundamental science... to follow that research wherever it leads.

Professor Postol alleging that he's being silenced by the Pentagon. This brings up the issue between government and university researchers.

CMV: If I can put it in a broad context, the world has changed in a lot of ways over this decade. The situation we face today is a lot more complex in terms of our industrial and economic complex, what we normally think of as globalization, the nature of threats to our military security is certainly different than it was twenty years ago. I think it really is time to think in broad terms about the relationship between university and government. These two and three-way partnerships are great strengths in terms of our nation and our university system.

We need to reexamine the ground rules under which we undertake things involving particularly the government, but also to some extent industry. Right now there are huge concerns about any scientist doing any work involving the use of satellites, there are big questions about the use of certain computers and transmission of certain information. We've got to get back to making sense of this. I realize it's a rather vague answer. My sense is the world has changed over the last few years, and we need a broad engagement among these three partners to rethink things and understand the ground rules.

TT: Finally, MIT has always been a leader in applied research, but manages some sort of balance between fundamental and applied research. What is your take on this dichotomy?

CMV: I think the dichotomy is grossly overstated. I think, in field after field, the boundary between what is fundamental and what is applied is almost nonexistent. Look at, for example, what has happened in modern biology.

Look at the fascinating work of John Joannopoulos, leading to new concepts in optical fibers. Look at new work in nanotechnology and microscale work. These things are so fuzzy that I don't think you can draw the distinction and I think that

we will be in trouble if we put a hard boundary between the two. Having said that, there's no question that the *sine qua non* of research universities is in fact to deal with truly fundamental science, asking curiosity-driven questions, being

able to follow that research wherever it leads. And I think at MIT at the moment, we have a very healthy mix between things that are truly, unquestionably fundamental, things that are quite applied — areas like manufacturing and product development, and then in the middle, this increasingly expanding portion, which is in some sense is neither of the above. I think we have a pretty healthy mix right now.

TECHNOLOGY REVIEW

Smart Card Technology

Embedded Chips in New Cards Prevent Fraud

By Greg Kuhnert
STAFF WRITER

What makes a smart card smart? Why are credit card companies rushing to put them into the hands of consumers?

The smart card — the successor to the magnetic strip cards commonly used for identification, banking, and commerce — represents the latest in a series of technologies aimed at reducing fraud.

The defining characteristic of the smart card is an embedded chip with the ability to store or process information. This chip communicates with a smart card reader through either a set of contacts on the surface or an internal antenna. A card may simply be a store of information, providing some piece of data to card readers, or it may contain more complex functions, such as encrypting or hiding information from all but a trusted few parties.

Combating card fraud

Smart cards reduce fraud by making it much more difficult to tamper with or copy the stored information. Furthermore, its ability to process data makes the card useful for creating digital signatures with public key cryptography. Documents marked with a digital signature cannot be forged or altered without invalidating the signature.

Cards prevent tampering, copying

A magnetic swipe card exposes all of its sensitive information to anyone with a magnetic card reader, so one hundred dollars worth of special hardware could make copying a conventional swipe card possible. Yet a smart card's data can be accessed only through its chip's interface. In some cases the chip itself can restrict the ability to read or write the data.

Limiting access to data is one of the important functions of the smart card. Consider, for example, its use as a stored value card for a subway system. With a magnetic strip, it would be easy to recharge the card by simply reading the magnetic strip just after the card's purchase, and then writing that same data back to the card when its value is depleted.

A smart card, however, might require a reader to provide a special passcode before it would allow the rewriting of its cash value. It may even fail to provide any information at all until a reader has authenticated itself to the card. If a particularly high level of security is needed,

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BOOK REVIEW

Psychoanalysis Meets Physics Via Epistles

Chen-Pang Yeang

Book Review: *Atom and Archetype: The Pauli/Jung Letters, 1932-1958*
Edited: C. A. Meier, (with a preface by Beverley Zabriskie)
Princeton University Press, Princeton, 2001

Scientists are sometimes not "rational" in the sense that we laypeople understand, particularly in

the case of twentieth century physicists. Unlike their empiricist, positivist, and pragmatist predecessors in the eighteenth and nineteenth centuries, the physicists in the twentieth century were not afraid of contemplating in the realms often conceived to be non-physical, meta-physical, or even anti-physical. Einstein thought a lot about the philosophical implication of the relativistic space-time; Bohr studied Kierkegaard intensely.

Wolfgang Pauli was among these scientific figures in his unique way — he was a daring explorer of his own dreams, imagination, psyche, and unconscious. The recently published correspondence between Pauli and Jung leads us to a spiritual journey of a scientist in a world of esoteric symbols, exotic dreams, metaphors, astrology, and alchemy.

Pauli, and Austrian physicist, was known to be a master of modern physics. Born in Vienna at the turn of the twentieth century, he actively participated in the Germanic-Nordic academic circle, whose members included Bohr, Sommer-

feld, Heisenberg, Schroedinger and which laid the foundation of quantum mechanics in the 1920s. His critical contributions to atomic and particle physics largely shaped the microscopic world view that we have today. They include the first calculation of the hydrogen spectra based on the "new" quantum mechanics in matrix form and the proposal of the "exclusion principle" that prohibits two electrons to

possess an identical quantum state.

The Swiss psychologist Carl G. Jung was also a contemporary intellectual giant, but in an altogether different field — psychoanalysis. Born in Basel twenty five years before Pauli, Jung received training in medicine and psychiatry in Switzerland. He was much influenced by Freud after meeting with him in 1907.

Like Freud, Jung believed that the ego of a human being has multiple layers. The layer buried deeply beneath the apparent consciousness, the so-called "subconscious," is the most important drive of personality. But the subconscious may be manifested through analyzing dreams, fantasies, and imagination. Jung was famous for separating the part of the unconscious that belongs to the particular individual history, the "personal unconscious," from the part that is shared by all people within the same cultural domain, or the "collective unconscious."

Jung was much more interested in

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President Vest shares his views on the major scientific issues of today.

obviously got great credentials as his background as a physicist — I think it is terrific that it is a physical science-based person. It's a great appointment. The ultimate question is, how important will the role be in the administration, that's the issue.

TT: Judging from past role of National Science Advisers, do you think he'll be able to have much influence?

CMV: I think it is absolutely too early to know.

TT: Were you incidentally offered the position of science adviser?

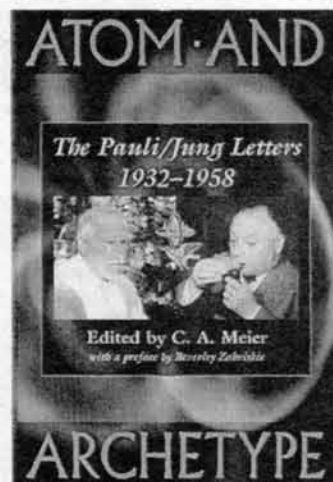
CMV: I consulted with people in the White House who were reviewing the situation. We had discussions about who would be good. Let's put it that way.

TT: Could you ever see yourself in Washington?

CMV: I don't know about "ever," but at the moment, I believe it's much more important to be here. I've got many things started that I intend to finish over the next few years. And quite frankly, MIT has a great voice and a level of independence in trying to deal with national science policy. One might even argue that it is as least as functional to be here in this role.

TT: As a natural extension of science policy matters, I'd like to ask you for your views on some of these issues. A hot one is stem cell research — what are your views for the potential?

CMV: We have not taken an institutional position about stem cell research with the sole excep-



TECHNOLOGY REVIEW

SmartPhones Offer Internet Service, E-mail Client

Wallet-sized Cellular Phone Much Touted by Telecom Firms Verizon Wireless, Sprint Despite Hefty Price Tag

By Devdoot Majumdar
ARTS EDITOR

The last time I took a weekend excursion to New York, I made the mistake of planning. This time, I evaded such frivolity and took the Chinatown express with the clothes I was wearing, the shoes on my feet, and my Kyocera Smartphone.

The last item on the list became a veritable fifth appendage. It got the only hotel room that fit the trip's budget. It sent the e-mail to my UROP supervisor saying I would be missing work at 6 a.m. It arranged a conference call between a publicist in Los Angeles and a Tour Manager in Boston and me, from the Museum of Modern Art in New York.

Over the past few years, the world has slowly acclimated itself to the Palm phenomenon. Coupled with the plague of cell phones hitting the 18-24 demographic, Kyocera and a handful of other

companies have debuted the "Palm Phone" — a completely wireless device that connects to the Internet, sends e-mails, organizes like a Palm Pilot, and operates like a cellular telephone. Plus, it's wallet sized.

The dominant such product in the market is being touted by Verizon Wireless, and more recently Sprint, as the solution to having one's pockets filled with a cell phone and a separate Palm device. Despite the \$400 - \$500 price tag, the phone has no additional monthly service charges. Mobile minutes are mobile minutes, after all.

Granted, the college audience has to weigh the cost of a \$500 cell phone with the burdens of a tight budget. The redeeming features of such a hefty cost are immediately apparent. First, a high-end Palm device alone approaches the \$500

range. The added benefit is that, with the coupling of Palm with cell phone, one has an incredibly functional level of Internet access. Whereas standard cell phones offer three lines of text (around 36 characters) and call themselves "Internet ready," the Smartphone offers

Physically, the Smartphone is a little larger than the size of a Palm Pilot, having the capability of flipping open to reveal the Palm screen.

the standard interactive touchscreen that has the advantage of displaying roughly 450 characters per screen.

Capable of accessing the Internet wirelessly at roughly 14.4 kilobits per second, the Smartphone does well to

avoid displaying images entirely. As most webpages have hidden tags for images, the web is surprisingly navigable without images altogether. Essentials like Yahoo! Mail or The Tech <<http://www-tech.mit.edu>> are easily read on-line.

Physically, the Smartphone is a little larger than the size of a Palm Pilot, having the capability of flipping open to reveal the Palm screen. Closed, the phone looks normal, with a numeric pad for dialing and access to the address book resident within the Palm Operating System. Once flipped open, it operates like any other Palm OS-based PDA, with a web browser (EudoraWeb) and e-mail client (Eudora) due to Kyocera's corporate relationship with Qualcomm.

Unlike several other cellular service providers, Verizon's has a high

signal strength at most MIT locations. For instance, the connection remains unhindered when travelling from one end of the Infinite Corridor to the other. Sprint, on the other hand, although a provider for the Smartphone, has a far inferior track record in terms of signal availability at MIT (attempts to improve signal availability are underway).

The business of cell phones only presents one other viable competitor for the Kyocera Smartphone, the ubiquitous Handspring Visor. The Visor's expansion slot supports a cellular phone card, aptly named the VisorPhone and retailing at \$49 (in addition to the roughly \$200 cost for a Visor Palm device) when combined with cellular activation with Voicestream Wireless. In the end, the VisorPhone, though functional, is a glorified Visor with none of the Smartphone's cell phone features.

Cards Use Advanced Cryptography

Cards, from Page 7

ed, a card can add special security mechanisms that allow it to erase its contents upon tampering.

Digital signatures offer protection

The advent of the Internet introduced a substantial rise in credit card theft. Online shoppers give their supposedly-secret credit card information to each site which they buy

from. Inevitably, some of these sites may be hacked, compromising every credit card the system has ever accepted. The key to making web purchases safe is to keep secrets secret — not just from thieves, but even from merchants themselves.

Public key cryptography, the concept behind the digital signature and its underlying technology, can be difficult to grasp because it seems to have no real-world analog.

Conventional (symmetric) cryptography uses a single key for both encryption and decryption.

By contrast, public key (asymmetric) cryptography uses a pair of related keys — one of them designated as public and the other as private. The public key is distributed as widely as possible on the web, everywhere from ends of e-mails to the numerous repositories called key stores. The private key is kept secret and is never given out.

If a message is encrypted using one key, it can only be decrypted with the other. Digital signatures are based on this property. In the simplest possible implementation, a person signs a document simply by encrypting it with their private key. Anyone receiving the signed document can then get the sender's public key from a multitude of sources and decrypt the document. That a document decrypts with the public key is proof that it was encrypted with the sender's private key and thus is authentic.

For an online credit card transaction, the system works as follows. When a customer is ready to make a purchase, the merchant provides an invoice to the customer, who then reviews the invoice and inserts the smart credit card into a reader. The computer hands the invoice over to the smart card, which signs and gives it back to the computer. The computer then transmits the invoice back to the merchant, who can verify the user's signature.

This system is considerably more secure than the current one. Private information is only kept in one place, — the smart card itself. Smart cards provide a way condense a secret into a physical object that the average user can protect.

Cards may be quite versatile

Smart cards are already being used in several applications outside of commerce. While smart cards are just beginning to enter the U.S. market, they have been used in Europe for years. Many European countries have replaced coin-operated payphones with smart-card-based debit systems. Since they do not contain money, smart card phones are less frequent victims of vandalism.

Some cell phones currently store their user information on smart cards. If the phone breaks or an owner decides to upgrade, she simply moves her old smart card into the new phone. Service, along with phone books and any saved preferences, is instantly transferred.

Computer log-ins, e-mail signatures, and identification cards are just a few of the potential future uses for the technology. As smart cards become more common, we can expect an expansion in the number of applications that are available.

SCIENCE & TECHNOLOGY ROUNDUP

Stem Cell Debate Continues Following Bush Decision

A report commissioned by the National Academy of Sciences states that additional colonies of human embryonic stem cells are necessary to allow scientists to investigate any potential benefits of the research.

"High quality, publicly funded research is the wellspring of medical breakthroughs" the report says.

"Stem cell research that is publicly funded...offers the most efficient and responsible means of fulfilling the promise of stem cells to meet the need for regenerative medical therapies."

Additionally the authors of the report noted that cell lines that became inviable would need to be replaced. "Over time, all cell lines in tissue culture change...[and] such concerns necessitate continued monitoring of these cells as well as the development of new stem cell lines in the future," the report says.

The commission, headed by Johns Hopkins professor Dr. Bert Vogelstein, flies in the face of a recent presidential order limiting federal funding to only those 64 stem cell lines already established. Also included on the six-member panel were brain researchers, a cardiologist, and a medical ethicist.

Furthermore, in a report released on Monday, the National Bioethics Advisory Commission recommended that taxpayer dollars be spent on controversial research that uses human stem cells from fertilized eggs produced for in-vitro fertilization.

Appointed by President Clinton, the report was released despite some Congressional members' preparations to block all federal funds for research on cells coming from human embryos.

- Shankar Mukherji

Researchers Image HIV-1 Virus Infecting Cells

Three-dimensional images from researchers at the Dana-Farber Cancer Institute in Boston provide the fullest picture to-date of how the AIDS virus cripples the immune system's ability to attack infection and cancer.

Appearing in a study in the September 11 issue of the *Proceedings of the National Academy of Sciences*, the images give a detailed, close-up look at one part of the meeting between infected cells and "helper" T cells, which mobilize the body's defenses against disease. Comparing these images with images of the meeting between helper T cells and HIV-1 (the virus that causes AIDS) shows how HIV-1 mimics other enemy invaders and in effect blinds the T cells to the existence of cancer and infection.

Twenty years ago, Dana-Farber researchers discovered a molecule called CD4 on the surface of helper T cells. CD4 acts as an antenna, letting helper T cells probe other cells for infection signs and, in the case of HIV, an opening by which the virus gains entry to the cell and overthrows its function.

- Nancy L. Keuss

Gravity Wave Detection Experiment Preparations Nearly Completed

With the connection of critical glass wires, the GEO600 experiment is set to begin collecting data on elusive gravity waves. The waves, which are predicted by Albert Einstein's theory of general relativity, are widely believed to exist but have yet to be detected.

Scientists predict that the detection of gravity waves would give astronomers a powerful tool to study supernovae, black hole formation, and perhaps even the Big Bang at an earlier stage than the cosmic microwave background.

The experiment, based near Hanover, Germany, is planned to detect the gravitational waves by means of a laser light which will measure fluctuations in the distance between two mirrors hung by silica threads measuring 200 microns in diameter.

A rival project jointly sponsored by Caltech and MIT, the Laser Interferometer Gravitational Wave Observatory (LIGO), will use similar technology when it undergoes its first test on December 28, the same day as the GEO600 is slated to begin testing.

- Shankar Mukherji

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MIT Department of Facilities

CAMPUS CONSTRUCTION UPDATE

VASSAR STREET UTILITIES Truck and machine work may limit parking and travel along Vassar Street. Noise in several areas will be generated from machinery, back up alarms, and jackhammers.

BUILDING 3 CLASSROOMS Drilling and saw-cutting will take place in order to create new duct shafts for the Hatsopoulos Lab, affecting all floors. Construction is also underway in the distance learning classroom, which is expected to be completed in September.

LOBBY 7 RESTORATION Interior scaffolding will remain in place, awaiting delivery and installation of the new skylight. Finish work will then take place on the skylight below. Construction is also underway at the 77 Mass. Ave. exterior entrance to repair the cracked limestone facade. Scaffolding has been erected, and pedestrian traffic may be affected.

ZESIGER SPORTS & FITNESS CENTER An increase in the use of movable cranes and the delivery of concrete may result in congestion of accesses to the Johnson Athletic Center and Kresge Auditorium. Pedestrian and vehicular traffic may be affected.

STEAM TRAP REPLACEMENT The Department of Facilities will replace steam traps in radiators throughout campus beginning in Sept. Work will be done between the hours of 7 AM and 3 PM, with each steam trap taking approximately one and a half hours to replace. Buildings 2, 4 and 10 will be the first areas to be worked on.

MASS. AVE. STORM DRAIN Due to the installation of catch basins and a water main relocation, access to the parking facility at the corner of Vassar Street and Mass Ave. will not be available on the Mass. Ave. side. Vehicular traffic may enter the site from the Vassar Street side. Pedestrians will be able to access the Fleet ATM Branch facility from either side.

For information on MIT's building program, see <http://web.mit.edu/evolv>
This information provided by the MIT Department of Facilities

Jung and Pauli Explore Unity of Physics and Psyche

Book Review, from Page 7

the collective consciousness. From investigating myths, alchemy, astrology, and other ancient or medieval religious rituals, he discovered that some common patterns (be they symbols, figures, or numbers) prevailed in the dreams and fantasies of his patients. Therefore, he argued, the mentality of the human being consists of fundamental and predetermined formal factors, known as "archetypes," revealed in these recurrent patterns. His preoccupation was to give interpretive meaning to psychological and cultural phenomena in terms of these archetypes.

Although the relationship between these two people began with Jung's psychiatric consulting for Pauli's mental problem, the book is not about Pauli's individual personality or psychic trajectory. All the letters collected in this book are concerned with a general theme: how to provide a Jungian psychological foundation for the knowledge of modern physics. But what does this mean?

Both Jung and Pauli were against the Cartesian viewpoint that the physical world and the human mind are essentially different and independent and therefore should be considered separately. For them, according to the letters, objective and subjective cannot be sharply distinguished. Because the knowledge about the physical world is produced by human beings, the pattern of this knowledge must reflect the psychological states of the knowledge producers. Therefore, one can read modern physics not just as a text describing the regularity of the world in its literal sense, but also as a subtext reflecting and representing the psychic archetypes of modern people's collective unconscious. Physics and psychology are "united" in such a discursive manner, as long as we interpret quantum mechanics and relativity like we interpret dreams and myths.

This bold claim is not totally groundless, at least according to Pauli and Jung. In Pauli's dreams, terms, symbols, and concepts in quantum mechanics frequently appeared as unforgettable motifs. For instance, he describes group of dreams in which some figure of authority keeps on explaining to him the dispersion of a degenerated spectral line of an atom into a doublet, or the separation of a chemical element into two isotopes. Spectra lines, degeneration, and isotopes in Pauli's dreams must not have identical meaning as they have in his laboratory or conferences. Once these physical concepts are present in a person's imaginative world, they are in the same category as unicorn, leviathan, and phoenix.

So, how could one advance the hermeneutic game to uncover the psychic meaning of the modern physics? Jung and Pauli discussed this at length. They agreed with each other in pursuing the "archetypal implication" of the physical knowledge under a Jungian framework. But their takes of this pursuit

were slightly different. In the first few years when Pauli was exposed to Jung's psychology, he was eager to establish an analogous mapping of physical terms to psychological terms. In a letter written to Jung in October, 1935, Pauli constructed a table specifying the "psychological

Western people to break the Western rationality of Descartes, Newton, and Kant. To describe and represent the new world view properly, Pauli proposed a "quaternary" schema, a semiotic device frequently used by Jung for thinking and reasoning [page 57].

In the quaternary, "synchronicity" refers to the relation between phenomena coinciding in time and space for which there is no causal explanation but which have a meaningful connection. The dichotomy of energy and space-time, on the one hand, indicates the mutual convertibility between energy and matter in the physical space. On the other hand, it is analogous to the pair of energy and time fluctuations in the uncertainty principle. The quaternary is supposed to be both the description of the world picture and the indication of the psychic archetypes of human beings that construct this picture.

Jung looked from a slightly different angle. He was also intrigued by Pauli's bold proposal of "unifying" modern physics and his psychological theory. But for a scholar who had focused on mythology for decades, the most valuable fruit of this proposal was to extend the terrain of myths to the discourses of modern science. By doing so, one can analyze energy, field, force, isotopes, or radioactivity in the same manner by which one analyzes myths and rituals. But how does one connect these two realms?

Jung noted two conjunctions of science and myth which dated back to the Ancient and Middle Ages: alchemy and numerology. To Jung, the medieval alchemists and the twentieth-century atomic physicists had amazing similarity-- they both were able to transmute one kind of material to the other: the former through magic and the latter through radioactivity. The peculiarity of the medieval alchemists is that they were not only seeking magical

recipes to manipulate the characteristics of quick silver, sulfur, philosopher's stone, and other substances. Along with the materialistic practices, the alchemists developed a particular way to proceed from the investigation of the external world toward the inspection of the internal

spirit.

The other conjunction of science and magic considered by Jung was man's fascination with numbers. Both modern physics and ancient mathematics or astronomy are the sciences of numbers and quantities. Nevertheless, many ancient and medieval mathematicians and astronomers thought about numbers not merely for their instrumental values. The Greek numerological tradition as early as Pythagoras occulted a set of "sacred" numbers for their beautiful arithmetic properties. These numerologists considered numbers not only as tools but also as mysterious, esoteric, and sacred entities which inevitably relate to the self.

Although they no longer connect the knowledge of the world with the

trinity, hermeneutics, "I-Ching" (the Chinese classic "The Book of Change"), and so on.

Indeed, as Pauli relates in the letters, his dreams were filled with the icons of his profession such as atoms and spins, but equally abundant with esoteric figures -- a black woman wearing a white gown, the number four, dead relatives. The image of the man uncovered from Meier's archival work is much more diverse and incomprehensible than we have anticipated. That makes Pauli a real human being, a contradictory, enigmatic, and hence charming human being.

But the opposite of this pro is an unavoidable con: this book is not easy to digest. Most likely, the reader will find a large part of this book ambiguous, confusing, unconvincing, and even incomprehensible. Both authors frequently referred to the terms in psychoanalysis, medieval Christian philosophy, I-Ching, alchemy, or Indian religion without clarification, which inevitably causes difficulty to readers not well versed in these areas. Worse, in a number of places, it

is very hard to figure out what the authors mean, or, if we could understand what they mean, where the arguments could lead to.

The impatient reader may stop at page one hundred and begin to accuse Pauli of being superstitious and Jung speculative, or vice versa, and both too vague. However, there is a good reason for these shortcomings -- Pauli and Jung never expected someone else to read these texts. Their letters were written not for a book, a paper, an essay, or any type of publication, but for their own communications. They had no obligation to clarify the vagueness in their writings, because we were not supposed to understand.

For those who might criticize Pauli and Jung for crossing the borderline between science and non-science, there is another defense. Pauli and Jung were careful not to publish their speculations. In particular, Pauli never let this part of his life enter his physics work and that is why the story of Pauli this book revealed is so unexpected.

The image of the man uncovered from Meier's archival work is much more diverse and incomprehensible than we have anticipated. That makes Pauli a real human being ... [an] enigmatic human being.

interpretation" of a number of "physical symbolism" [page 11-12].

According to this table, small dipoles arranged in parallel fashion are interpreted as many people mentally aligned together with an unconscious sense of identity, the splitting of spectral lines as process of differentiation, radioactive nucleus as self, and resonances as archetypes. This direction looked heuristic at the first sight, but Pauli was soon aware that pure analogy could ascertain no more than the apparent similarity of the two term sets. So he switched to work on another direction.

From Pauli's understanding, the Copenhagen interpretation of the uncertainty principle destroyed the Cartesian distinction of the subjective and the objective, relativity smeared the absolute independence between space and time in the Newtonian-Kantian cosmos, and the

Pauli was soon aware that pure analogy could ascertain no more than the apparant similarity of two term sets. So he switched to work on another direction.

probabilistic nature of quantum mechanics challenged the belief of definite causality. Modern physics was deeply questioning the philosophical world view built in the Age of the Reason. The radical implication of modern physics reflects precisely the inner drive of modern

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Solution To Crossword

from page 10

TOWN	COSTS	PUNT
ERIE	LAURA	ESAU
ACTIVATION	RUIN	
MAHLER	TOT	CAVE
RIP	PAROLES	
GLASNOST	SAL	
MERCENARY	MATTS	
ANTI	SLUES	TAIL
NOSES	MESAVERDE	
NOR	DESISTED	
SWATTED	SHE	
TAXI	COB	ARMADA
AVIS	ANALYSANDS	
GENT	SADIE	SNAP
ERGS	TREED	HAYS

mat solar



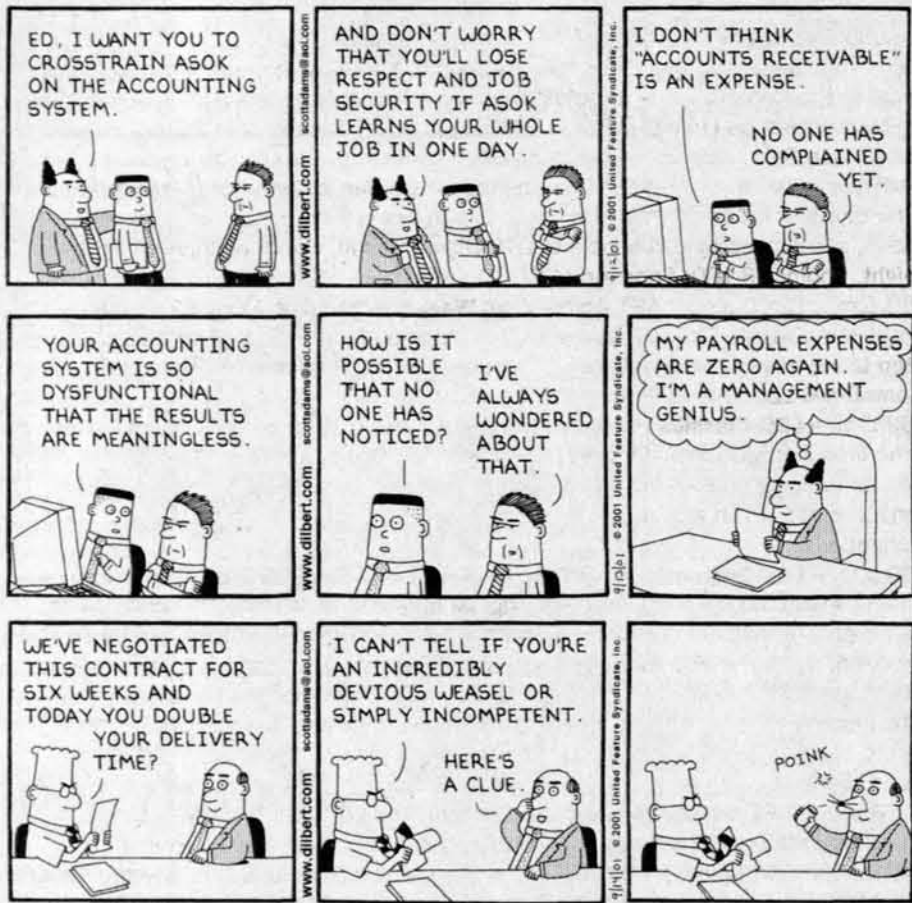
FoxTrot

by Bill Amend



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Crossword Puzzle

Solution, page 9

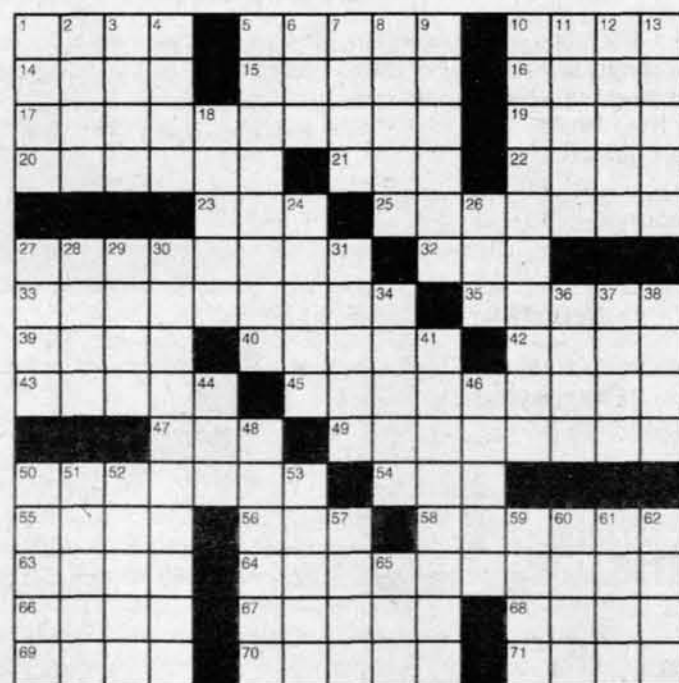
ACROSS
1 Commercial district
5 Expenses
10 Football kick
14 Pennsylvania port
15 Preminger film
16 Jacob's brother
17 Turning on
19 Bankruptcy
20 Composer Gustav
21 Kiddy
22 Lascaux or Altamira, e.g.
23 Grave letters?
25 Conditional releases
27 Gorbachev policy
32 Actor Mineo
33 Soldier of fortune
35 Dillon and McCoy
39 Not in favor of
40 Turns on a pivot
42 Pig end
43 Features to count?

45 National park in Colorado
47 Negative conjunction
49 Ceased
50 Slapped
54 "___ Loves You"
55 "___ Driver"
56 Male swan
58 Fleet afloat
63 Hertz rival
64 Shrink's cases
66 Lady's man, for short
67 Sexy lady of the Beatles
68 Metal fastener
69 Work units
70 Trapped in the branches
71 Fodder plants

DOWN
1 Side in a contest
2 Killer whale
3 Accompanying
4 Singing Diamond

5 Medieval trumpets
6 Livestock tidbit
7 Courtship
8 Move as a throng
9 Seasonal employees
10 Makes coffee, one way
11 Normal
12 Inexperienced
13 Airs
18 Captain Nemo's creator
24 Sacred hymn
26 Ewe's mate
27 Fed
28 Carson's successor
29 Liberal
30 Physicists, chemists et al.
31 Lined up
34 Affirmatives
36 Small pie
37 Powerful trend
38 Huskies' pull

41 Flounced
44 Barfly
46 Contenders
48 Select new players
50 Enact
51 Sit on the fence
52 Cutting staff
53 God of thunder
57 Commanded, old-style
59 Pound to a pulp
60 Singer Moffo
61 6/6/44
62 Small vipers
65 Prevaricate



TechCalendar

Visit and add events to TechCalendar online at <http://tech-calendar.mit.edu>

Friday, September 14

9:00 a.m. - 2:00 p.m. – **MIT Annual Vendor Fair** . Office Suppliers, MRO, Furniture, Temp Help, Computer Vendors, Internal Providers, and Event Calendar Coordinators. free. Room: McDermott Court/Tent outside buildings 54 and 18. Sponsor: Conference Services.

12:00 p.m. - 1:00 p.m. – **Mac OS Quick Start**. Get started with managing Macintosh applications, files, and folders efficiently. Obtain an overview of new features provided by the newest Mac operating system. free. Room: N42 Demo Center. Sponsor: Information Systems.

4:15 p.m. - 5:30 p.m. – **On the Combinatorics of G2**. Refreshments will be served at 3:30 PM in Room 2-349. free. Room: Room 2-338. Sponsor: Combinatorics Seminar. Department of Mathematics.

5:00 p.m. - 7:00 p.m. – **Opening Reception: The MIT Great Glass Pumpkin Patch**. Opening reception for an installation of glass pumpkins — all for sale Sept 15-16 from 9am-5pm — to support the MIT Glass Lab. free. Room: Kresge Oval. Sponsor: MIT Glass Lab.

6:00 p.m. - 7:30 p.m. – **How to Succeed at MIT and Have a Life Too!**. Prof Picard shares her insights on how to balance your life and faith at MIT. free. Room: Student Center Room 407. Sponsor: Graduate Christian Fellowship.

7:00 p.m. - 9:00 p.m. – **Falun Gong Exercise workshop**. The Falun Gong exercise is an easy and effective way to relieve stress and improve physical and mental health. Millions of people in over 40 countries practice these 5 sets of gentle movements. free. Room: 1-242. Sponsor: Falun Dafa Club.

7:00 p.m. – **LSC Presents: Star Wars Marathon**. Star Wars: A New Hope, The Empire Strikes Back, and Return of the Jedi. These films of the original Star Wars trilogy marked a breakthrough in science fiction and special effects. Making over a billion dollars in revenues, the Star Wars franchise is still going strong today. There are no plans to release the original trilogy on DVD, but you CAN see them at LSC. All films presented in their 35mm theatrical glory, with 6-channel DTS Digital Sound. Come relive the Star Wars saga as all three films are presented back-to-back! There will be breaks in-between films. See 7:00, 9:30, and 11:59 listings in tonight's TechCalendar, or visit <http://lsc.mit.edu/> for more details. \$6. Room: 26-100. Sponsor: LSC.

7:00 p.m. – **LSC Presents Star Wars: A New Hope**. The one, the only, the Special Edition of Star Wars. A landmark film that brought together myth and science fiction, revolutionized special effects, and left a lasting mark on popular culture. The Galactic Empire has developed a terrifying new weapon that can destroy entire planets, and it's up to the Rebel Alliance to defeat it before freedom is gone from the galaxy. Starring Mark Hamill as Luke Skywalker, Carrie Fisher as Princess Leia Organa, Harrison Ford as Han Solo, and Alec Guinness as Obi-Wan Kenobi. If you've never seen it, you absolutely must. If you've seen it a hundred times, see it once more. Come to see it in the only way it can truly be experienced — in widescreen 35mm on a gigantic screen, surrounded by 6 channels of DTS Digital Sound. \$6 for all three movies tonight. Room: 26-100. Sponsor: LSC.

7:00 p.m. - 12:00 a.m. – **MIT Anime Club Weekly Screening**. Most screenings are subtitled in English. The MIT Anime Club is a non-profit MIT student organization dedicated to increasing the awareness of Japanese animation (anime) on campus. . free. Room: Rm 6-120. Sponsor: Anime Club, MIT.

7:30 p.m. – **LSC Classics Presents: Harvey**. A classic 1950 comedy about the power of the imagination. Jimmy Stewart plays Elwood P. Dowd, a mild-mannered man who sees an invisible six-foot tall rabbit named. Josephine Hull plays Veta Louise Simmons in a role which won her an Academy Award for Best Actress. \$3. Room: 10-250. Sponsor: LSC.

9:30 p.m. – **LSC Presents: The Empire Strikes Back**. The LSC Star Wars Marathon continues with the second film of the original trilogy, in its restored Special Edition. The Death Star has been destroyed, but the battle against the Empire has hardly been won. Consumed by his hatred for Luke Skywalker, Lord Darth Vader attacks the Rebel base on the icy planet of Hoth. Our heroes escape, but are separated, and while Imperial Star Destroyers chase the Millennium Falcon, Luke Skywalker must train to become a Jedi. Presented in the theatrical glory of 35mm with DTS Digital Sound. \$6 for Empire and Jedi. Room: 26-100. Sponsor: LSC.

11:59 p.m. – **LSC Presents: Return of the Jedi**. The LSC Star Wars Marathon concludes with the final film of the original trilogy, in its restored Special Edition. Leia must rescue Han from the clutches of the vile ganster Jabba the Hut, and the Rebel Alliance faces an even more terrifying threat — a second Death Star. Awesome special effects, intense battle scenes, and epic plot. Presented in 35mm Panavision, with crystal-clear DTS Digital Sound system. \$3. Room: 26-100. Sponsor: LSC.

Saturday, September 15

9:00 a.m. - 5:00 p.m. – **The MIT Great Glass Pumpkin Patch**. Sale of handblown glass pumpkins in support of the MIT Glass Lab. . free. Room: Kresge Oval. Sponsor: MIT Glass Lab.

1:00 p.m. – **Field Hockey Alumnae Game**. free. Room: Barry Turf Field. Sponsor: Department of Athletics.

1:00 p.m. – **W. Volleyball vs. Mt. Holyoke**. free. Room: DuPont Gymnasium. Sponsor: Department of Athletics.

1:00 p.m. – **Men's Soccer vs. Rhode Island College**. free. Room: Steinbrenner. Sponsor: Department of Athletics.

4:30 p.m. – **Women's Soccer Alumnae Game**. free. Sponsor: Department of Athletics.

7:00 p.m. – **LSC Presents: Star Wars Marathon**. Star Wars: A New Hope, The Empire Strikes Back, and Return of the Jedi. These films of the original Star Wars trilogy marked a breakthrough in science fiction and special effects. Making over a billion dollars in revenues, the Star Wars franchise is still going strong today. There are no plans to release the original trilogy on DVD, but you CAN see them at LSC. All films presented in their 35mm theatrical glory, with 6-channel DTS Digital Sound. Come relive the Star Wars saga as all three films are shown back to back! There will be breaks in-between films. See 7:00, 9:30, and 11:59 listings in tonight's TechCalendar, or visit <http://lsc.mit.edu/> for more details. \$6. Room: 26-100. Sponsor: LSC.

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TechCalendar appears in each issue of *The Tech* and features events for members of the MIT community. *The Tech* makes no guarantees as to the accuracy of this information, and *The Tech* shall not be held liable for any losses, including, but not limited to, damages resulting from attendance of an event. Contact information for all events is available from the TechCalendar web page.

ring Mark Hamill as Luke Skywalker, Carrie Fisher as Princess Leia Organa, Harrison Ford as Han Solo, and Alec Guinness as Obi-Wan Kenobi. If you've never seen it, you absolutely must. If you've seen it a hundred times, see it once more. Come to see it in the only way it can truly be experienced — in widescreen 35mm on a gigantic screen, surrounded by 6 channels of DTS Digital Sound. \$6 for all three films tonight. Room: 26-100. Sponsor: LSC.

8:00 p.m. - 11:00 p.m. – **Patrol**. Shoot your friends! Travel to strange, new classrooms; meet interesting, unusual people; and kill them. A team game of shoot-em-up; guns provided. free. Room: Building 36, First Floor. Sponsor: Assassins' Guild, MIT.

9:30 p.m. – **LSC Presents: The Empire Strikes Back**. The LSC Star Wars Marathon continues with the second film of the original trilogy, in its restored Special Edition. The Death Star has been destroyed, but the battle against the Empire has hardly been won. Consumed by his hatred for Luke Skywalker, Lord Darth Vader attacks the Rebel base on the icy planet of Hoth. Our heroes escape, but are separated, and while Imperial Star Destroyers chase the Millennium Falcon, Luke Skywalker must train to become a Jedi. Presented in the theatrical glory of 35mm with DTS Digital Sound. \$6 for Empire and Jedi. Room: 26-100. Sponsor: LSC.

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Sunday, September 16

9:00 a.m. - 2:00 p.m. – **MIT Swapfest**. Buy/Sell/Swap All Things High Tech. \$5. Room: Albany St. Garage. Sponsor: MIT Radio Society.

9:00 a.m. - 5:00 p.m. – **The MIT Great Glass Pumpkin Patch**. Sale of handblown glass pumpkins in support of the MIT Glass Lab. free. Room: Kresge Oval. Sponsor: MIT Glass Lab.

2:00 p.m. - 5:00 p.m. – **Healing Society Forum**. A Lecture on how Brain Respiration, a technique to improve the capabilities of the brain, relates to Individual, Social, and Global Peace. \$20, students \$8, Groups over 5 people 20% off (After August 15th, \$25, students \$10). Room: Kresge Auditorium. Sponsor: Hansori, Dahn Yoga Club. Boston Dahn Centers.

4:00 p.m. – **LSC Presents Star Wars: A New Hope**. The one, the only, the Special Edition of Star Wars. A landmark film that brought together myth and science fiction, revolutionized special effects, and left a lasting mark on popular culture. The Galactic Empire has developed a terrifying new weapon that can destroy entire planets, and it's up to the Rebel Alliance to defeat it before freedom is gone from the galaxy. Starring Mark Hamill as Luke Skywalker, Carrie Fisher as Princess Leia Organa, Harrison Ford as Han Solo, and Alec Guinness as Obi-Wan Kenobi. If you've never seen it, you absolutely must. If you've seen it a hundred times, see it once more. Come to see it in the only way it can truly be experienced — in widescreen 35mm on a gigantic screen, surrounded by 6 channels of DTS Digital Sound. \$3. Room: 26-100. Sponsor: LSC.

4:00 p.m. – **Hyderabad Brothers. (Carnatic vocalists)**. Sesha Chary and Raghava Chary with Delhi Sundararajan, violin and Srimushnam Rajarao, mridangam. Sesha Chary and Raghava Chary learned music from their father Sangeetha Sahitya Vidwan Late D. Ratnamacharyulu. Their mother D. Sulochana Devi is also a very good musician. Later, Raghava Chary had training from Vidwan Late Susarla Sivaram. They have performed duet programs in all reputed Sabhas all over India including All India Radio and Television for a very long time. Hyderabad Brothers have evolved for themselves a compact pattern of presentation and their mutually blending voices make a deep impact on the listeners. They have received numerous awards in India including the title of "Sangeetha Kalaimamanis." They have toured worldwide giving concerts and this is their fourth tour of the U.S. and Canada. \$100, \$50, \$30, \$20 (and \$10 for MIT students). Room: Wong Auditorium. Sponsor: MITHAS (MIT Heritage of South Asia).

7:00 p.m. – **LSC Presents: The Empire Strikes Back**. The second film of the original trilogy, in its restored Special Edition. The Death Star has been destroyed, but the battle against the Empire has hardly been won. Consumed by his hatred for Luke Skywalker, Lord Darth Vader attacks the Rebel base on the icy planet of Hoth. Our heroes escape, but are separated, and while Imperial Star Destroyers chase the Millennium Falcon, Luke Skywalker must train to become a Jedi. Presented in the theatrical glory of 35mm with DTS Digital Sound. \$3. Room: 26-100. Sponsor: LSC.

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Monday, September 17

12:00 p.m. - 1:30 p.m. – **Mac Tech Partners User Group**. MIT Macintosh Partners is a group of MIT employees who help computer users in their department with Mac-related issues. A representative from Apple Computer attends many of the meetings. Topics include reviewing new hardware/software from Apple and third party vendors and changes in the MIT computing environment as well as discussing general Macintosh industry trends and news and issues facing MIT Mac support people. free. Room: N42 Demo Center. Sponsor: Information Systems.

4:00 p.m. - 5:00 p.m. – **"Strong cosmic censorship for the spherically symmetric Einstein-Maxwell-Scalar field equations."**. free. Room: MIT Room 2-143. Sponsor: Differential Geometry Seminar. Department of Mathematics.

Today – **"Cutaneous Grooves"**. A showcase of the research on tactile composition conducted by graduate student Eric Gunther at the MIT Media Lab. Essentially a concert for the skin, it is a dance you feel instead of see — by hearing music and feeling choreographed vibrations against your skin. The concert includes pre-composed musical / tactile pieces as well as a real-time improvisational sonic-tactile performance. This project has been made possible in part by the Grants Program of the Council for the Arts at MIT. Seating is limited; tickets issued on a first-come, first-served basis. Shows will take place evenings at the MIT Media Lab (E15). Info/ticketing, go to Web Site. free. Room: Media Lab (E15). Sponsor: Media Lab.

Clubs

Axis

13 Lansdowne St., 617-262-2437

Sundays: See Avalon below.
Mondays: *Static*. Gay, casual dress. \$5, 18+.
Thursdays: *Chrome/Skybar*. Progressive house, soul, disco; dress code. \$10, 19+; \$8, 21+.
Fridays: *Spin Cycle*. Progressive house, 80s. \$12, 19+; \$10, 21+.

Avalon

15 Lansdowne St., 617-262-2424

Sundays: *Gay Night* (with Axis on long weekends). Featuring hardcore house and techno. \$10, 21+.
Thursdays: *International Night*. Eurohouse. \$10, 19+.
Fridays: *Avaland*. House. \$15, 19+.
Saturdays: *Downtown*. Modern house, club classics, and Top 40 hits. \$15, 21+.

Karma Club

9 Lansdowne St., 617-421-9595

Sundays: "Current dance favorites" by guest DJs. Cover varies.
Tuesdays: *Phatt Tuesdays*. With Bill's bar, modern dance music. \$10.
Wednesdays: *STP*. Gay-friendly, house. \$15, 21+.
Thursdays: *Groove Factor*. House.
Fridays: *Pure*. Drum and bass, guest DJ. \$15, 19+.
Saturdays: *Elements of Life*. International House. \$15.

ManRay

21 Brookline St., Cambridge, 617-864-0400

Wednesdays: *Curses*. Goth. Appropriate dress required. \$5, 19+; \$3, 21+.
Thursdays: *Campus*. Popular tunes + House. Gay, casual dress. \$10, 19+; \$7, 21+.
Fridays: *Fantasy Factory* (First and third Friday of the month. Features kinky fetishes and industrial music.) *Hell Night* (every second Friday. 19+.) Includes Goth music.) *Ooze* (the last Friday of the month.) \$10, 21+. reduced prices for those wearing fetish gear.
Saturdays: *Liquid*. Disco/house + New Wave. \$15, 19+; \$10, 21+.

Popular Music

Axis

13 Lansdowne St., 617-262-2437
Next: 423-NEXT

Sep. 14-15: Lit.
Sep. 16: Five Iron Frenzy, Relient K, Ace Troubleshooter, John Reuben.
Sep. 21: Ocean Colour Scene.
Sep. 22-23: AFI.
Sep. 25-26: Black Eyed Peas.

Avalon

15 Lansdowne St., 617-262-2424

Sep. 15: Ben Folds.
Sep. 18-9: Incubus.
Sep. 20: Stereophonics
Sep. 21: David Byrne.
Sep. 22: Melissa Ferrick
Sep. 26: Lifehouse
Sep. 28: Long Beach Dub All Stars
Oct. 4: St. Germain.
Oct. 12: Megadeth.
Oct. 16: Sum 41.
Oct. 30: They Might Be Giants
Oct. 31: Cowboy Mouth, Fighting Gravity.

Berklee Performance Center

Berklee College of Music
1140 Boylston St.
Free student recitals and faculty concerts, 4 p.m. and 7 p.m. some weekdays. For info on these concerts, call the Performance Information Line at 747-8820.

Sep. 15: Sonny Rollins.
Sep. 21: Sigur Ros.
Sep. 22: Bobby Womack.
Oct. 13: Dulce Pontes.

Sunday in the Park with George

Through Sep. 27: At the Lyric Stage, 140 Clarendon St., Boston. Sep. 14, 21 at 8 p.m., Sep. 15, 22 at 4 and 8 p.m., Sep. 16, 23 at 3 p.m., and Sep. 19-20, 26-27 at 7:30 p.m. 1985 Pulitzer Prize winning musical portrait of 19th-century artist Georges Seurat, libretto by James Lapine, music by the great Stephen Sondheim. Tickets \$36-\$25; call 617-437-7172.

On The Town

A weekly guide to the arts in Boston
September 14 – 20
Compiled by Fred Choi

Send submissions to ott@the-tech.mit.edu or by interdepartmental mail to "On The Town," The Tech, W20-483.

Club Passim

47 Palmer St. Cambridge, 617-492-7679

Tuesdays: Open Mic at 8 p.m. (sign up at 7:30). \$5.
Sep. 14: Fishken & Groves CD Release.
Sep. 15: Barbara Kessler, Jeff Cohen.
Sep. 16: Ellen Schmidt, Cheryl Perreault and Steve Rapson.
Sep. 19: Rex Fowler, Montgomery Delaney and Terence Martin.
Sep. 20: Rob Laurens, Jonathan Pointer.
Sep. 21: Mark Dix CD Release.
Sep. 22: Meghan Toohey, Hewitt Huntwork.
Sep. 23: Jason Harrod, Josh Cole.
Sep. 24: Balla Tounkara.
Sep. 26: Katy Moffatt.

FleetBoston Pavilion

290 Northern Ave., Boston 617-737-6100

Sep. 16: O-town.

FleetCenter

Ticketmaster: 931-2000.

Oct. 2-3: Neil Diamond.

Oct. 26: Rod Stewart

Nov. 24: Bob Dylan

The Middle East

Central Square, 354-8238

Ticketmaster: 931-2000.

Sep. 14: Faint, Outhud.
Sep. 14: Weakerthans, Atom and His Package.
Sep. 15: Owls, Milemarker, New End Original, New Brutalism.
Sep. 15: To Roccoco Rot With Isound, Maru Mari.
Sep. 16: Pedro the Lion.
Sep. 16: Tight Brothers From Way Back, C Average, Cherry Valence.
Sep. 17: Manplanet, Federation X.
Sep. 18: Apples In Stereo, the Clean.
Sep. 18: Cutthroat 9s.
Sep. 19: El Vez.
Sep. 19: Ken Stringfellow (of the Posies), John Vanderslice.
Sep. 20: Easy Action, Grand Total.
Sep. 20: Escape Live Latin-caribbean.
Sep. 21: Superkollider, Oxes.
Sep. 22: Cheerleadr, Dr Frog.
Sep. 22: Bleu, Count Zero, All the Queens Men.

Orpheum Theatre

1 Hamilton Pl., Boston, 617-679-0810

Ticketmaster: 931-2000

Sep. 14-15: moe.
Sep. 22: Khaled, Hakim and Andy.
Oct. 2: Nick Cave and the Bad Seeds.
Oct. 5: Travis
Oct. 10: Judas Priest
Oct. 13: Gov't Mule.

Sanders Theatre

45 Quincy St., 02138, 617-496-2222

Sep. 15: Laurie Anderson.
Sep. 22: Ray Davies Storytellers.
Oct. 12: Waifs and Nerissa and Katryna Nields.
Oct. 13: Four Bitchin Babes.
Nov. 17: Folk Concert With Cris Williamson.
Nov. 24: Capitol Steps.



WILLIAM HAMES

Lit is playing tonight at Axis with opening band Handsome Devil; tickets are \$15.

Tweeter Center for the Performing Arts (Great Woods)

885 South Main St., Mansfield, MA 02048
Ticketmaster: 931-2000

Sep. 14: The Guess Who With Joe Cocker.
Sep. 15: Radio Disney Live.
Sep. 21-22: Tool.
Sep. 25: Weezer.

Wang Center for the Performing Arts

270 Tremont St., Boston 02116, 617-482-9393

Oct. 12: Bjork.
Oct. 15: Tori Amos.

Jazz Music

Regattabar

Concertix: 876-7777
1 Bennett St., Cambridge 02138, 617-662-5000

Call for schedule.

Scullers Jazz Club

DoubleTree Guest Suites, 400 Soldiers Field Rd., Boston, 617-562-4111

Sep. 14-15: Keely Smith.
Sep. 18: Stingy and Brimm.
Sep. 19-20: Richard Elliot.
Sep. 21-22: Ts Monk Jr.
Sep. 26: George Russell Jr.
Sep. 27-28: Acoustic Alchemy.
Oct. 25-26: Dee Dee Bridgewater.

Classical Music

Boston Symphony Orchestra at Tanglewood

Tickets: 266-1492.

Performances at Symphony Hall, 301 Massachusetts Ave., Boston, unless otherwise noted. For MIT Students: Tickets are offered for Thursday evening concerts (8 p.m.) and Friday afternoon concerts (1:30 p.m.) and are available on the day of the concert only at the BSO Box Office at Symphony Hall (301 Mass. Ave. Open 10 a.m. - 6 p.m.). Two tickets may be obtained with two current valid MIT student IDs, subject to availability. For updated MIT student ticket availability, call 638-9478 after 10 a.m. on the day of concert.

Oct. 2 at 6:30 p.m.: Seiji Ozawa, conductor; Dawn Upshaw, soprano; Susan Graham, mezzo-soprano; Blythe Danner, narrator. Women of the Tanglewood Festival Chorus, John Oliver, conductor. Mendelssohn: Overture and Complete Incidental Music to *A Midsummer Night's Dream*, Op. 61.

Oct. 5, 6, 9 at 8 p.m.: Seiji Ozawa, conductor; Peter Serkin, piano. Brahms: Piano Concerto No. 1, Op. 15; Symphony No. 1, Op. 68. Pre-concert talk by Marc Mandel.

Theater

A Midsummer Night's Dream

Sep. 20-30, at the Wang Theatre, 270 Tremont St. The Boston Ballet begins its season with Gerald Arpino's *Suite Saint-Saens*, a ballet so fast and bright that Agnes de Mille once said it was "like standing in a flight of meteors." The evening also includes Bruce Well's Shakespearean familiar romp, *A Midsummer Night's Dream* (Music by Felix Mendelssohn), a tale of four lovers caught up in the strange enchantment of a midsummer's eve as Oberon, the King of the Fairies, spars with his proud queen, Titania. Buy tickets on-line through Telecharge (telecharge.com) or call 1-800-447-7400.

Mamma Mia!

Tickets available through Sep. 26, at the Colonial Theater (106 Boylston St.). The threadbare plot of the British import (built around classic hits by ABBA) is: Young bride Sophie wants her dad to give her away. But her spunky mom — an ex-nightclub disco singer named Donna — doesn't know who he is. So Sophie secretly invites three of mom's old boyfriends (her possible dads) to her wedding. At first, it's a complete disaster. But Donna and her old backup-singer buddies save the day and transform the island into an ABBA-accompanied silver lami adventure that includes scuba-diver dancers, grooms in bridal gowns and choruses in neon shower caps. An engagingly clever sing-along satire of itself, *Mamma Mia!* makes you move, chuckle, and stomp your platform heels.

Comedy Connection

Mon.-Wed. at 8 p.m.; Thurs. 8:30 p.m.; Fri. and Sat. 8 p.m.; 10:15 p.m.; Sun. 7 p.m. The oldest comedy club in Boston showcases big-name, national comedians on weekends and up-and-coming local talent during the week. At 245 Quincy Market Place, Faneuil Hall, Upper Rotunda, Boston. Admission \$10-\$8 (weekend prices vary). Call 248-9700 for more information and a complete schedule.

Improv Boston

ImprovBoston is Boston's oldest and most acclaimed improvisational comedy troupes. Improvisational comedy is based on the premise of no premise. Performers bump into each other onstage and then create a story out of gestures, reactions and plenty of quick thinking. What often determines the direction of a scene are suggestions from audience members who, at any moment, might be yanked from their seats to become part of the show. Performing at the Back Alley Theatre in Cambridge, shows are every Saturday at 8 and 10:30 p.m. The Back Alley Theatre is located at 1253 Cambridge Street, Inman Square in Cambridge. Tickets are \$12, \$10 for Students. 576-1253.

Blue Man Group

Charles Playhouse, 74 Warrenton Street, Boston, indefinitely. Curtain is at 8 p.m. on Wednesday and Thursday, at 7 and 10 p.m. on Friday and Saturday, and at 3 and 6 p.m. on Sunday. Tickets \$35 to \$45. Call 426-6912 for tickets and information on how to see the show for free by ushering.

Exhibits

Isabella Stewart Gardner Museum

280 The Fenway, Boston. (566-1401). Tues.-Sun. 11 a.m.-5 p.m. Admission \$10 (\$11 on weekends), \$7 for seniors, \$5 for students with ID (\$3 on Wed.), free for children under 18. The museum, built in the style of a 15th-century Venetian palace, houses more than 2,500 art objects, with emphasis on Italian Renaissance and 17th-century Dutch works. Among the highlights are works by Rembrandt, Botticelli, Raphael, Titian, and Whistler. Guided

tours given Fridays at 2:30 p.m.

Museum of Fine Arts

465 Huntington Ave., Boston. (267-9300). Mon.-Tues., 10 a.m.-4:45 p.m.; Wed., 10 a.m.-9:45 p.m.; Thurs.-Fri., 10 a.m.-5 p.m.; Sat.-Sun., 10 a.m.-5:45 p.m. West Wing open Thurs.-Fri. until 9:45 p.m. Admission free with MIT ID, otherwise \$10, \$8 for students and seniors, children under 17 free; \$2 after 5 p.m. Thurs.-Fri., free Wed. after 4 p.m.

Mon.-Fri.: introductory walks through all collections begin at 10:30 a.m. and 1:30 p.m.; "Asian, Egyptian, and Classical Walks" begin at 11:30 a.m.; "American Painting and Decorative Arts Walks" begin at 12:30 p.m.; "European Painting and Decorative Arts Walks" begin at 2:30 p.m.; Introductory tours are also offered Sat. at 11 a.m. and 1:30 p.m.

Permanent Gallery Installations: "Late Gothic Gallery," featuring a restored 15th-century stained glass window from Hampton Court, 14th- and 15th-century stone, alabaster, and polychrome wood sculptures from France and the Netherlands; "Mummy Mask Gallery," a newly renovated Egyptian gallery, features primitive masks dating from as far back as 2500 B.C.; "European Decorative Arts from 1950 to the Present"; "John Singer Sargent: Studies for MFA and Boston Public Library Murals."

Gallery lectures are free with museum admission.

Museum of Science

Science Park, Boston. (723-2500). Daily, 9 a.m.-5 p.m.; Fri., 9 a.m.-9 p.m.; Sat.-Sun., 9 a.m.-5 p.m. Admission free with MIT ID, otherwise \$9, \$7 for children 3-14 and seniors.

The Museum features the theater of electricity (with indoor thunder-and-lightning shows daily) and more than 600 hands-on exhibits. Ongoing: "Discovery Center"; "Investigate! A See-For-Yourself Exhibit"; "Science in the Park: Playing with Forces and Motion"; "Seeing Is Deceiving."

Ongoing: "Friday Night Stargazing," Fri., 8:30 p.m.; "Welcome to the Universe," daily; "Quest for Contact: Are We Alone?" daily. Admission to Omni, laser, and planetarium shows is \$7.50, \$5.50 for children and seniors. Current Laser Light shows: *Laser Beastie Boys*, *Laser Ragefest 3*, *Laser Pink Floyd: Dark Side*, *Laser Aerosmith*.

Other

A Studio of Her Own: Women Artists in Boston 1870-1940

Through Dec. 2, 2001, at the Museum of Fine Arts. This exhibit presents over eighty of the finest paintings, sculpture, and decorative arts created by women at the turn of the last century. Drawn equally from the MFA's holdings, other museums and institutions, and private collections, the exhibition includes works by over forty artists. While some of them are well known, like Lilian Hale and Anna Vaughn Hyatt, many others remain uncelebrated. No matter the level of their fame, their art represents an aesthetic achievement of great significance and beauty.

The Films of Frederick Wiseman

The Museum of Fine Arts offers a complete retrospective of Wiseman's 31 documentaries, every Saturday, through April 14, 2002. At the Remis Auditorium Museum of Fine Arts, Boston, 02115 unless otherwise noted. For tickets and more information, call 369-3770. Tickets are \$8, \$7 MFA members, seniors, students.

Multi-Handicapped

Sep. 29 at 10:30 a.m.: (1986, 126 min.). This film shows the day-to-day activities of multi-handicapped and sensory impaired students and their teachers, dormitory parents, and counselors at the Helen Keller School. The film presents situations involving personal hygiene, mobility training, concepts of time and money, self help and independent living, dormitory life, recreation, sports, vocational training, and psychological counseling. This film will be shown on 16 mm in the Riley Seminar Room.

Duke's Wallace To Investigate Handling of Harassment Case

By Sandra M. Chung
ASSOCIATE ARTS EDITOR

Dean for Student Life Larry G. Benedict announced that Kathleen C. Wallace of Duke University will conduct a review of MIT's actions regarding a harassment complaint filed by the late Julia M. Carpenter '03 against Charvak P. Karpe '04.

Wallace could not comment on the case in question.

Kenneth Arnold, the father of Carpenter's boyfriend Zev Arnold, has been in contact with President Charles M. Vest since May 7, and was the first to suggest the policy review on behalf of the Arnold and Carpenter families. MIT responded by appointing a committee, headed by Vest, to review potential investigators.

Benedict was the first person to recommend Wallace for the post. The committee reviewed and approved the recommendation.

Wallace a seasoned investigator

Wallace graduated from the North Carolina Central Law School, and is a member of the North Carolina State Bar Association, the Association for Student Judicial Affairs, and the Center for Academic Integrity. She was a police officer in Durham, North Carolina from 1991 to 1994, and is currently the Associate Dean for Judicial Affairs in the Office for Student Development at Duke University.

Wallace's duties at Duke include administering the undergraduate judicial system, serving as hearing officer for violations of the undergraduate judicial code, maintaining student disciplinary records, serving as the undergraduate harassment prevention advisor, and coordinating the school's peer mediation program.

A trained mediator, Wallace has adjudicated, mediated, or referred various cases like Carpenter's. She has drawn on her experience as a police officer in her work with emergency response protocols, including those for Duke's response to student deaths. Wallace said of student deaths, "We have very specific protocols. We identify the people to be notified and which responsibilities belong to which officials in the Student Affairs Office on a case-by-case basis."

Investigation under investigation

Before accepting it in late August, Wallace was briefed on the case. She immediately began research through numerous sources, including recent newspaper articles as well as documentation provided by Kenneth Arnold. She anticipates the need for a trip to MIT to investigate some items and conduct interviews firsthand, although recent events have put such travel on hold for the time being. Wallace is currently dealing with the effects of the recent World Trade Center disaster on the student population at Duke, and could not offer an estimate of the duration of her review. "I want to take as long as I need to investigate the situation fully," she said.

Wallace will write a report detailing her conclusions and recommendations, which may help the Office of the Dean for Student Life improve MIT procedure for handling complaints similar to Carpenter's. MIT does not intend to make the report public. However, the Institute will share with the MIT community any changes made to MIT procedure as a result of the report. Wallace will also evaluate the Institute's response to Carpenter's death, and may offer

suggestions as to how MIT can better respond to student deaths.

Harassment case to be examined

The disciplinary case in question involved Carpenter and Karpe, a fellow resident of Random Hall at the time. Despite knowing about Carpenter's longtime boyfriend, who is currently a junior at Washington University at St. Louis, Karpe allegedly persisted in pursuing a romantic relationship with Carpenter. Over the course of the fall term and the Independent Activities Period, Karpe's persistent attentions allegedly turned into threats and intrusions on Carpenter's privacy.

Carpenter filed a complaint with the Random Hall Judicial Committee at the end of January. JudComm tried the case throughout February, but failed to reach a decision. The case was deferred to the Office of Student Life, where Senior Associate Dean for Students Robert M. Randolph moved the offending student to East Campus and appointed an administrative panel to review the evidence and testimony. The panel's April 20 decision included a provision for the student to move back into Random Hall.

The harassment case was not brought to the attention of the police until after Carpenter's death. Kenneth Arnold was the first to inform MIT Campus Police Officer Mary Bath Riley about the incident.

Carpenter received and signed the decision on April 25. In the early morning hours of April 30, she was found dead on the floor of her room. Her death was ruled a suicide by the Office of the Suffolk County Medical Examiner. In a May 14 service in Kresge Chapel, the MIT community mourned her loss.

CS Experts Aid Needy

CommuniTech Aims to Bridge Digital Divide

By Jing-Helen Tang

CommuniTech, a service group that explores ways to bridge the digital divide and help the community, held an yesterday evening to recruit new members.

The group actively takes part in a national effort to provide access to the latest technology to the needy. Activities range from teaching disadvantaged families to refurbishing computers. The group also sends student volunteers to various health centers and non-profit organization to help with their computer systems.

Group aids disadvantaged

CommuniTech carries out three main projects: Families Accessing Computer Technology (FACT), CONNECT, and MIT Used Computer Factory (UCF).

FACT targets low-income families and provides them with basic computer instruction. Topics for tutorials include opening files, using a computer to surf the Internet, and even writing complaint letters.

CONNECT pairs students with schools and organizations, either to teach children about computers or help with database and web site developments.

UCF gathers donated computers, refurbishes them, and redistributes them to needy families.

Club calls 'Course 6ers who care'

Over a dozen students responded to the club's call for "Course 6ers Who Care" by attending last night's meeting.

"I wanted to do something useful. In class, I don't really get to apply things right away," said Linda X. Hue '03, a Course VI (Electrical Engineering and Computer Science) major.

Although the meeting was aimed

primarily at Course VI students, Izzat N. Jarudi '04, a Course IX (Brain and Cognitive Science) major also attended the meeting after finding out about CommuniTech from the Public Service Center. "I was interested in finding more about it," he said.

Students who have participated in CommuniTech recalled positive experiences. Pius A. Uzamere II '04 described his participation in FACT last year as "very rewarding. The family was very willing to learn about everything."

CommuniTech hopes to pool MIT's resources to help the community of greater Boston. "We are more concerned about making real impact on the families and helping the volunteers getting a satisfying volunteering experience" than about any specific long term goals, said Bryan P. Adams G, CommuniTech's founder.

Mission has expanded

"It hasn't been what I expected," Adams said. "It was much harder, the confluence of problems on three levels: family, volunteers, and the administration."

Adams started the group with two Harvard students in January 2000. Originally, it was centered around computer hardware collection and distribution. Since then, the organization has expanded its scope to include teaching and development as well.

People of different socioeconomic classes and residents of rural areas are sometimes given unequal access to technology, particularly Internet access. According to U.S. Department of Commerce's *Falling Through the Net* report, the Internet access rate is 38.9 percent for rural residents, only 19.2 percent for families in the lowest income bracket (with annual incomes of less than \$15,000), and less than 25 percent for African and Hispanic Americans.

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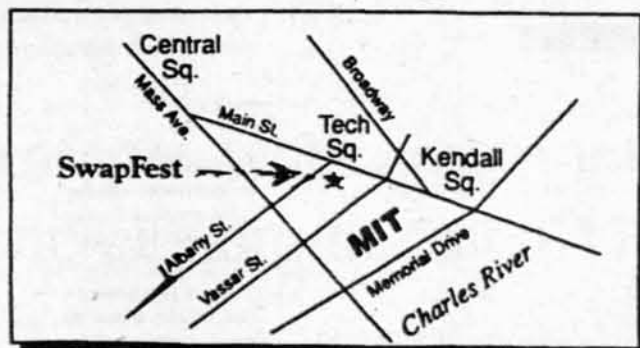
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Tuesday's Attacks Dicussed at CIS Forum

By Eun J. Lee

ASSOCIATE NEWS EDITOR

MIT's Center for International Studies held an open forum on Wednesday evening in an effort to help the community understand some of the possible international and societal consequences of Tuesday's events.

"We're here to hold a conversation about the new dangers in the international policy arena and the United States' responses to these dangers," said CIS Director Richard J. Samuel.

A large audience packed a small lecture hall in building E25. The panel of experts from the CIS included professors from a variety of specialties, ranging from Nuclear Weapons studies to Urban Studies and Planning.

"What happened yesterday under all definitions was a violation of human rights," said Urban Studies Professor Balakrishnan Rajagopal. "The act ignored all sanctity for human life."

Experts present personal opinions

Each panel member gave a short speech about the implications of Tuesday's events before opening up the floor to questions from the audience.

"This attack is going to cost us a lot of civil liberties; we are going to have to change the way we live our lives," said Political Science Professor Stephen W. Van Evera, who specializes in international affairs and security studies.

The forum's introduction presented the audience with three key questions which the panel members were examining: Why did this happen? Who might be responsible? What should the United States do now?

"I think the post-Cold War world ended [Tuesday]," said Political Science Professor Barry R. Posen. "The United States needs to reassess what it stands for in international politics."

The panel included five faculty members and one graduate student.

The panel members' opinions were as diverse as the members themselves.

"Had this been a nuclear attack, we'd be having to face that New York City did not exist at all, so the consequences could be a lot worse," said Senior Research Associate Alison M. MacFarlane, who specializes in nuclear weapons studies.

"There is no way to stop terrorism 100 percent of the time, and if we are to fight this, we must subordinate other goals in submission to security," said political science graduate student Jeremy Pressman. "Terrorism is a lot more about psychological warfare than an actual defeat on a battlefield."

Audience takes part in discussion

Following a statement by each member of the panel, the audience was allowed to ask questions.

The audience included not only students, but also alumni, faculty members, parents of students, and other community members. The top concern expressed from the audience was the response to the incident by the United States government.

"The president has a difficult decision to make," Pressman said. "To move to retaliate, you must have someone to retaliate against."

There was speculation at the forum about the possible culprits of the crime. Also discussed was the possible U.S. responses to the culprit and whether the blame should be placed on a state or an organization.

"If there's going to be any action, it's going to have to be a sustained long-term action by means of intelligence, covert, and non-covert operations," Posen said. "It's best to think of this as a grinding attrition kind of war that will last for a long time."

Posen also stressed that any long-term action would need the full support of U.S. citizens, far after the initial shock and anger from the incident has worn off.

"I would like to urge great caution because it would be very easy for the United States to get caught up with the danger cycle of violence," MacFarlane said.

"I haven't been impressed about what has come out of many politicians' mouths for reasons to fight other than revenge," Samuels said.

One option of retaliation for the United States that was proposed by Professor Van Evera was assassinating individual leaders who were responsible for the act, rather than killing innocent citizens.

"I am personally in favor of lifting the assassination ban enacted by President Carter," Van Evera said. "On an ethical standpoint, assassination in this case has a stronger moral grounding. If you're going to retaliate, you should punish those who were directly responsible rather than killing innocents."

However, Van Evera pointed out that political assassination has not been effective when it has been used.

Many of the panelists asserted that the event will catalyze a fundamental change in the way the U.S. shapes its foreign policy.

"What happened [Tuesday] has a lot to do with how the U.S. has behaved in the last few years," MacFarlane said. "We need to pay attention to other countries' reactions to U.S. behavior."

Panelists suggested that the U.S. reevaluate its role in globalization and its effects on different cultures throughout the world. Some also suggested missile defense projects should not be a priority, since they would not have prevented Tuesday's disaster.

"Whatever measure is agreed upon needs to be seen as legitimate by the rest of the world, and this may save us from further consequences from our actions," Rajagopal said.

Others expressed concern over how the U.S. can possible prevent terrorist attacks while upholding

civil liberties.

"I think we should be careful how terms are tossed around," Pressman said. "All Arabs are not Muslims and vice versa."

Pressman stressed that limitation of civil liberties might come in the form of new interpretations and stricter enforcement of standing laws rather than the the passage of new ones.

Political Science Professor Kenneth A. Oye made a poignant statement from his seat in the audience, which was met by widespread applause.

"Will we have the strength to resist the kinds of indiscriminate acts of violence that have been part of our destructive legacy in the past?" Oye asked. "Will the U.S. be able to resist such temptation?"

Students react to discussion

After the forum, many stayed around to continue the discussion with the panel members.

"It was great MIT was able to put this together so quickly," said Victor K. Mallet '02. "The speakers were good, but I was not impressed with the variety of viewpoints expressed on the panel and lack of Arab or Israeli angles."

He also said that "it was a great effort by MIT to spark more discussion and awareness about this event."

Thomas P. Kotwal G said, "The statement that we should expect to see a weapon of mass destruction used in our lifetime was frightening and definitely eye opening. It was very interesting to hear their points on assassination versus a more widespread attack."

At the conclusion of the forum, Professor Samuels promised to reconvene the discussion with another panel from the Department of International Studies in the near future.

"Like many of you, I'm more discomforted going out of this room than I was when I came in, but I'm far better informed," Samuels said.

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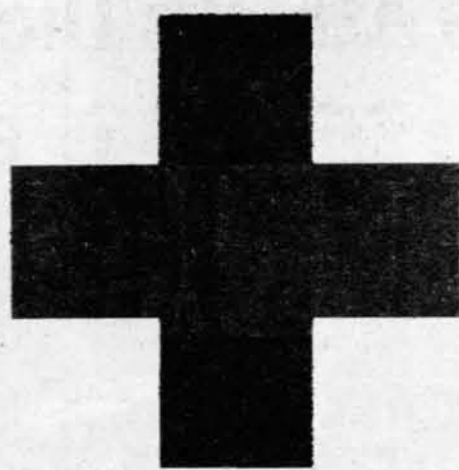
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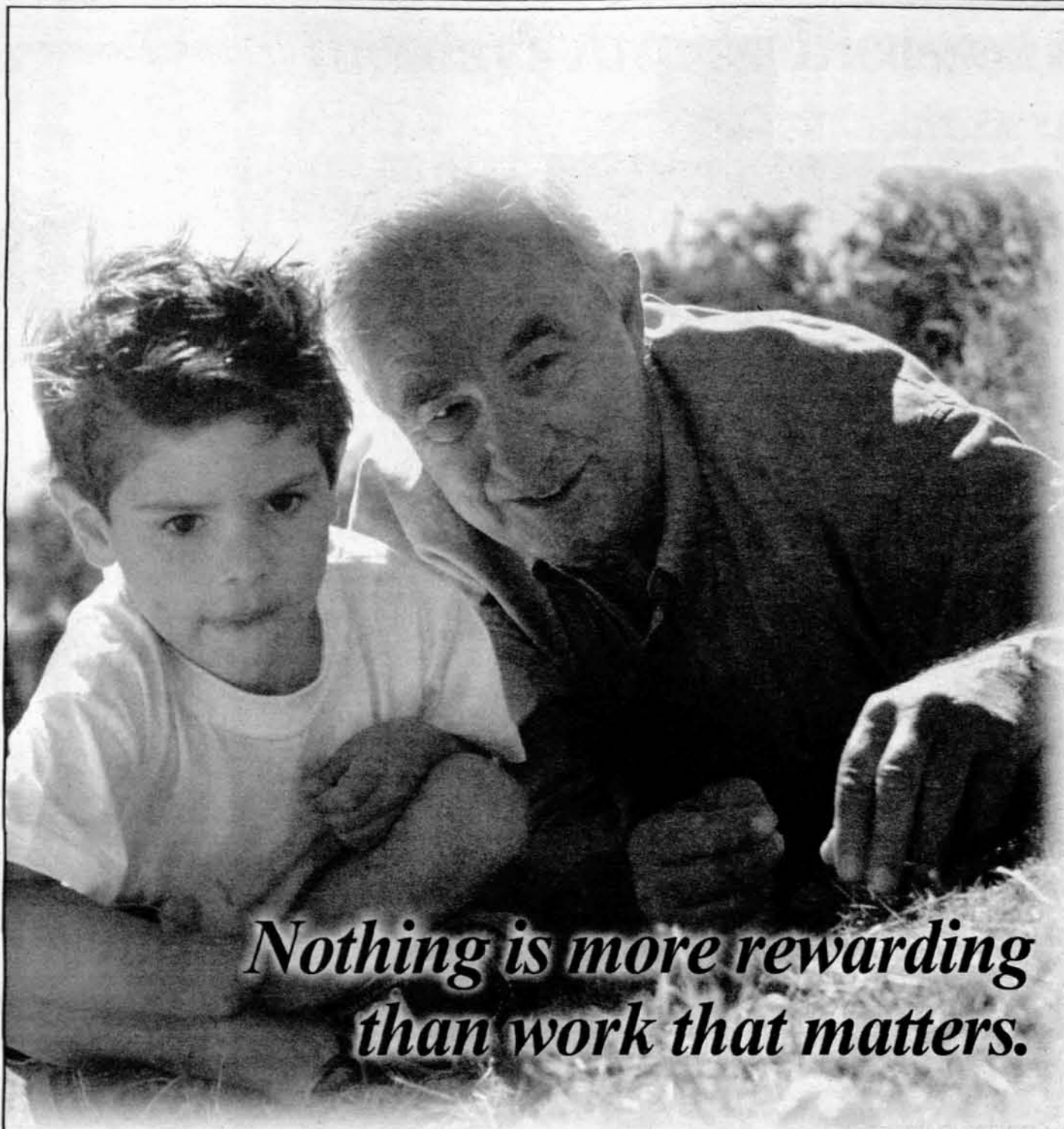
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Freedom of Speech Put to Test by Signs

Free Speech, from Page 1

question of whether this is the proper place to put it, said Jaryn E. Finch '04. "There's always a question of where free speech is allowed. At some universities this would never be allowed to go up."

"I personally would not like it to be put up," said James W. Taylor G, a graduate student in chemical engineering. But given that the administration supports the poster,

Taylor said there should be space for opposing viewpoints. "Other people should have the right to respond," he said. "If it truly is free speech, there should be equal opportunity for rebuttal."

Jonathan S. Steckel G, a graduate student in chemistry, did not oppose the poster, and believes that students should take charge to express contrary opinions. "If they disagree with it, they should put up a poster next to it," he said.

Services
&
Meals

Rosh HaShanah



Reform Services

MIT Chapel

Monday, Sept 17, 6:15 pm

Tuesday, Sept. 18 10:30 am

Conservative Services

Kresge Little Theatre

Monday Sept 17, 6:30 pm

Tues, Sept 18, 8:45 am & 6:00 pm

Wednesday, Sept. 19, 8:45 a.m.

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Monday, Sept. 17
8:00 pm

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Room 35-225

7:30 pm

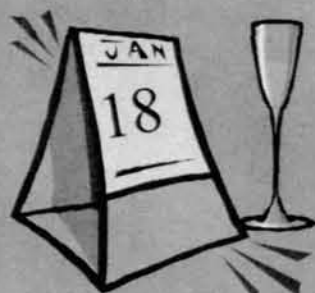
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MIT 2001 Career Week

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TUESDAY
Sept. 18

Putnam Investments 5-7pm Mezzanine
"Sell Signals You Won't Learn in a Classroom"

Alpha Simplex 7-9pm 6-120
"Finance Made Difficult:
Emerging Financial Technologies"

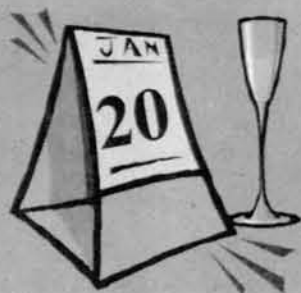


WEDNESDAY
Sept. 19

Boeing 11-1pm Twenty Chimneys
"Meet the Recruiters"

Capital One 5-7pm 54-100
"Case Interview Workshop"

IBM 7-8:30 pm 4-231
"Learning about IBM"



THURSDAY
Sept. 20

UBS 5-7pm Mezzanine
"Trading in the New Era"

NVIDIA 5-7pm 4-231
"NVIDIA Olympiad"
** Prizes for all winners **

ALUMNI EVENT 7-10pm Walker Memorial
"Dinner with MIT Alumni"



FRIDAY
Sept. 21

Symbol Technologies and Susquehanna
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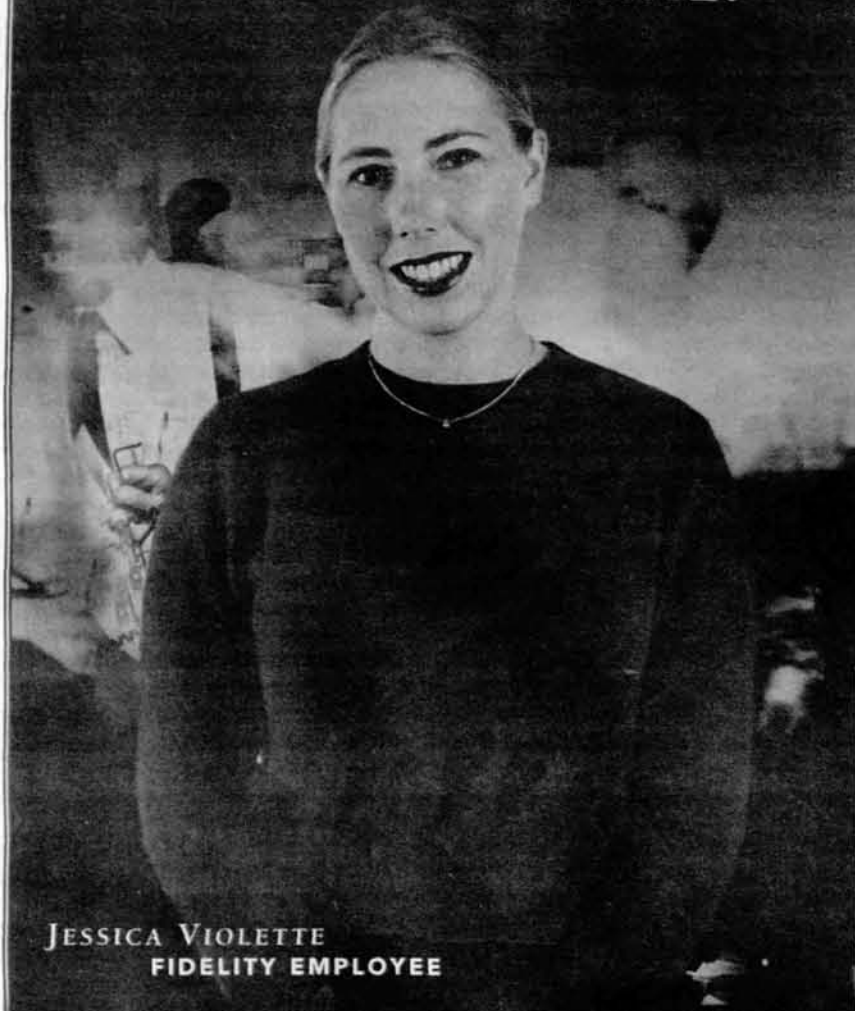
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Tuesday, September 18, 5:30 p.m.

Room 4-159

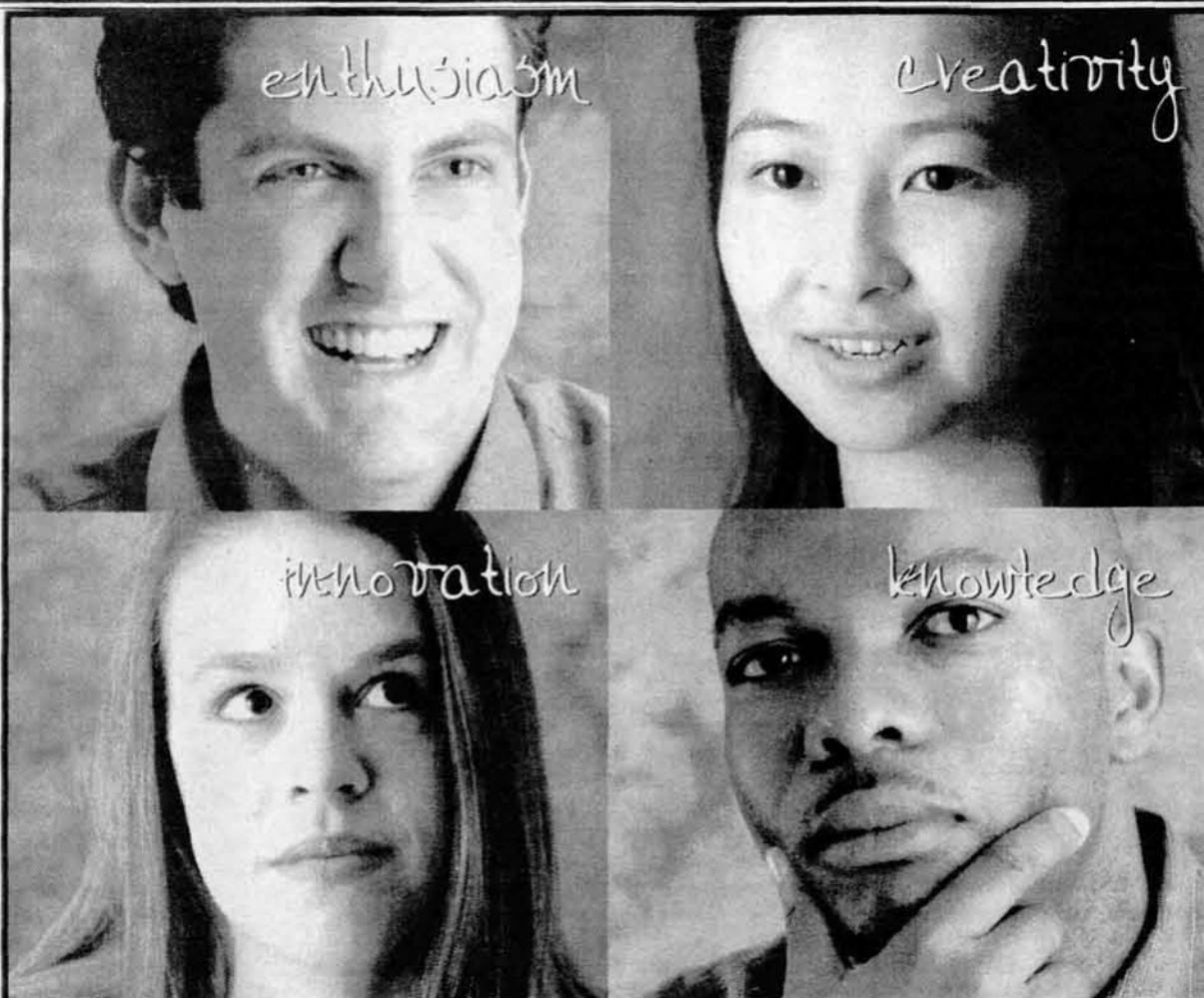
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Attendees Converse

Killian, from Page 1

through this before," he said.

Groups at Killian discuss incident

Following Seneviratne's address, the community split up into groups of ten to fifteen people, each of which was led by a faculty facilitator. Members of each group discussed their feelings about the tragedy, and told personal stories about people they knew who were involved in Tuesday's events.

For some, this ceremony was the first chance that they had to truly reflect upon the incident. Reverend John Wuestneck, a protestant chaplain, said that his work schedule had not given him much time to think about the significance of this tragedy. "I've been working so hard, it didn't really sink in until the music at the beginning of the ceremony," he said. Wuestneck said that most students who he has talked to felt that they benefitted from Wednesday's discussion groups.

Chaplains discuss student concerns

Kevin M. Ford, chaplain of the InterVarsity Christian Fellowship, said that many students are still numb from the experience. "There is a lot of shock about what the future is going to bring," he said.

"People are afraid, feeling distracted, angry ... I don't think it has really sunk in for a lot of people," Wuestneck said. "Some students went to school there, passed by that

building hundreds of times."

Ford said that everyone needs to make sure that their confusion doesn't turn them against other people on campus. "Particularly in a case where you don't know who to be angry at, it is easy to misdirect your bad feelings," he said.

Wuestneck worries that our nation may react before we have time to truly think about who bears the full responsibility for Tuesday's events. "I'm really afraid that we as a nation are going to react too quickly," he said.

Services available in coming days

The chaplaincy has arranged several services which will support students in the coming days. A bulletin board containing a list of support resources and suggestions for ways to help victims and their families has been placed on the first floor of the student center.

The chapel will remain open this weekend, and chaplains will be available on Friday and Monday to provide counseling services to students. The main dining room of building W11 will also be open, allowing people to continue discussion.

Several religious groups have planned services for today, which President Bush has proclaimed a national day of prayer and remembrance. At 12:30 p.m., an Interfaith Prayer Service will be held in the MIT Chapel, and at 5:15 p.m., the reflecting wall at MIT will be dedicated.



Members of the MIT community gathered in Killian Court on Wednesday afternoon to discuss Tuesday's attacks.

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TURNER FISHERIES

FBI agents stormed the Westin Hotel in Copley Square Wednesday afternoon, and removed three people suspected of having involvement in Tuesday's terrorist acts. The three men were later determined to be uninvolved.

Pilot Program May Pave Way For Larger Computing Changes

D. Long, senior strategist in Academic Computing.

Meanwhile, students enrolled in 1.00 will be paired up and instructed to "figure out how to share the laptop," Long said.

Students taking part in the TEAL program, the version of Physics II (8.02T) which has replaced the standard electricity and magnetism course usually offered in the fall, will interact with their laptops as part of their laboratory equipment. Each team of four to six students will be assigned a computer for use in a project-based setting.

Project an educational experiment

If the laptop program succeeds during initial tests, it could usher in the largest changes to campus

computing since the completion of Project Athena in June 1991.

"The idea is to accommodate different goals," Kumar said. "We want to move the computing environment to a stage where education is not reliant on the physical location of computing equipment, for example, Athena clusters."

"One-to-one computing is the vision we are trying to paint," Kumar said. "We envision a transformation in the clusters to a much more mobile, heterogeneous environment."

Still, no concrete plans for expanding the program are currently being discussed. "The outcome has not been determined," Long said.

Among the issues yet to be resolved are the availability of the infrastructure necessary to support such a wireless network and the basic question of whether students need the laptops at all.

"It's not like this is a step to some master plan," Long said. "We realize that the program is not for everybody. We are instead using this in the true sense of inquiry."

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Computer Associates would like to welcome back the students of Massachusetts Institute of Technology.

We would like to thank
Chon Ng
Justin Paluska
for their lasting contribution as 2001 Summer Interns.

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Volleyball Starts off Strong

Sports Shorts, from Page 24

of the tournament, there is a repeat winner at the Union College Men's Soccer Invitational, and that team is the MIT Engineers. Coach Walter Alessi's team followed up on its win in 2000 with a 1-0 defeat of Rensselaer, and a 2-0 victory over the hosts. Nicholas R. Nestle '04 scored the only goal in Saturday's contest with Raul J. Coral-Pinto '03 pitching the shutout in goal. Sunday's game winner was scored by Robert Pilawa '05 on assists from Nestle and Robert M. Reed '02. Reed tallied the insurance goal, as Morgan Mills '05 earned the shutout. Sweeper Rory E. Foster '04 was singled out by Alessi for his outstanding play all weekend, and was named the New England Women's and Men's Athletic Conference Player of the Week.

• The MIT women's volleyball team has opened the 2001 season with strong efforts in two tournaments. The Engineers took the championship of the Gordon College Invitational Tournament for the first time in the four years in which the Engineers have competed in the tournament. Kelly A. Martens '03 was named to the tournament most valuable player. Teammate Christina Almodovar '02 was an all-tournament team selection. Both Martens and Almodovar were also named to the all-tournament team at the Franklin & Marshall Invitational, where the Engineers took second place. Martens recorded her 1,000th career kill in the Gordon Tournament, and was named the NEWMAC Player of the Week.

• MIT men's cross country captured the first three spots, and eight of the top eleven finishers in running its way to the tenth win in the previous eleven years of competition for the Engineers' Cup with WPI and Rensselaer. Sean P. Nolan '03, was the individual winner completing the 5.1 mile course in 27:04.

• After 28 years of not defeating Brown University in water polo, MIT has defeated the Bruins twice in the past two years. The Engineers eked out a 5-2 victory in the Harvard University Invitational last weekend. Goalie Peter D. VanBuskirk '04 was the standout for MIT with 14 saves, 4 steals, and blocked a penalty shot.

• The summer proved to be successful for two members of the MIT coaching staff. Assistant sailing master Mike Kalin took third place of 111 competitors at the Canadian Olympic-training Regatta at Kingston (CORK), ONTARIO. CORK is one of several regattas in which sailors earn points to qualify for the world championships, which will be held in San Francisco next year. Women's ice hockey coach Katia Pashkevitch showed her versatility by rushing for 174 yards and two touchdowns on 19 carries in the New England Storm's 20-0 victory over the Syracuse Sting in the Women's Professional Football League opener for both teams.

Engineers Finish Week at 3-0

Soccer, from Page 24

indeed finish a goal without any help from Fitchburg, Morrison scored again less than a minute later. Morrison beat a number of defenders on the dribble before her placement past the keeper.

The score at halftime was 3-0 in favor of the Engineers. Yang recorded three saves for the Engineers in the first half, and the solid defensive play of the back unit of Paola B. Nasser G, Clinton, and Lydia A. Helliwell '05 and Airis Yonekura '05 held so strong the keepers saw no more action in the game.

The second half scoring was opened in a moment of déjà vu, as Griffin found another Perlmutter corner. This goal was different from their first connection, however, as Griffin's finishing touch was a driven header.

The scoring was rounded out by Helliwell's first collegiate goal as she blasted a low ball through a seemingly impenetrable mass of players on the ground. The final score read 5-0 in MIT's favor.

Engineers beat Eastern Nazarene

Saturday MIT traveled south on 93 to Quincy to face Eastern Nazarene College. From the first whistle, MIT controlled play by passing the ball swiftly around the field and hammering the Eastern

Nazarene goal. Despite the constant barrage of shots, the Eastern Nazarene goalkeeper's solid play, coupled with a number of MIT near misses, kept the game scoreless until the 22nd minute. Griffin put in a rebound off of a Perlmutter shot that ricocheted off the post to score the first goal of the match.

Although MIT still controlled play, they did not score again until almost 20 minutes later, when Wilson and Joanna M. Natsios '05 took a quick corner kick before the Crusaders' defense was organized. Griffin was, as always, alert and in the right place to volley Natsios's shot into the net.

Less than a minute later and with only a few minutes left in the half, Mendelowitz gathered a lovely through ball from Morrison to score the third and final goal of the half.

The second half scoring for the Engineers began early, as Morrison dribbled by a pair of defenders on her way to scoring MIT's fourth goal in the second minute of the half.

Ten minutes later, Cze-Chao Tam '02 lead Perlmutter with a well served pass into the box. Perlmutter finished just out of the goalkeeper's reach at the lower far post. Another ten minutes later, the favor was returned to Tam from Mendelowitz, as Mendelowitz sent a through ball that Tam shot past the keeper's near post.

Stephanie A. Claussen '05

would soon punctuate the scoring with MIT's seventh and final goal as she hustled to receive a well placed cross from Katrien Brak '05. Claussen then staved off a defender and rocketed a shot the keeper could not handle.

The MIT defense held strong all game, and didn't allow any shots on the MIT goal. The final score was 7-0 MIT. MIT goes into the second week of the season with a 2-0 record.

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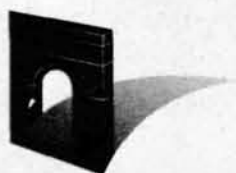
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SPORTS

Women's Soccer off to 3-0 Start

Engineers Defeat Tufts, Fitchburg State, and Eastern Nazarene

By Melissa Hart
TEAM COACH

The MIT Women's Soccer team tore through the first week of their season. After stunning the pre-season top ranked team in New England, Tufts University, 3-1 in a scrimmage match, they then tallied two decisive victories over non-conference opponents Fitchburg State College and Eastern Nazarene College.

On Tuesday, September 4, MIT faced the 2000 National Tournament runner up, Tufts University in Medford, Mass. Midway through the first half, Kelli A. Griffin '03 opened up the scoring by finishing a corner kick from team co-captain Rebecca E. Clinton '03. Griffin has been MIT's top scorer over the past two seasons.

A Tufts striker answered with an unassisted goal off the second half kickoff, tying the match 1-1. Soon thereafter Sarah E. Mendelowitz '03 found forward Candace N. Wilson '04 in the penalty box. Wilson targeted the back of the net as she fought off a Tufts defender. Within ten minutes Wilson scored again after beating a defender one on one and finishing with a shot past the goalkeeper.

The outstanding play of goalkeeper Connie Yang '03 frustrated Tufts in the first half, as she had 11 saves for the Engineers. MIT's Noelani K. Kamelamela '05 added six more saves in the second half, continuing Tufts' lament.

The result, although it will not count towards MIT's record, could be a harbinger of good things to come for the 2001 season.

MIT takes opener at home

On Thursday, September 6, the Engineers opened their regular season with a home game against visiting Fitchburg State. Though it took fifteen minutes or so for MIT to settle in, they moved the ball adeptly around the pitch and out of the reach



Candace N. Wilson '04 dribbles past a defender during the Women's soccer game against Fitchburg State. The Engineers racked up a flawless 3-0 record over the past week.

of the chasing Fitchburg players.

It is no big surprise that Griffin scored the first goal of the season for MIT, as she connected off a corner kick from co-captain Sarah K. Perlmutter '02.

Eight minutes later, midfielder Monica F. Morrison '04 scored in

an unorthodox fashion. Though a throw-in is indirect and a team cannot score directly from it, Morrison's mighty throw found the goal off of a unwitting Fitchburg defender. As if to prove she could

Soccer, Page 23

Women's Volleyball Takes Tournament Over Gordon

Tech Defeats Hosts with Perfect 3-0 Win

By Paul Dill
TEAM COACH

MIT defeated Bates College, Wheaton College and Gordon College to take the championship trophy at the Gordon College Invitational, MIT's first victory since it began attending in 1998.

MIT began the day against Bates College, who MIT had not beaten in their previous four matches. After a back and forth first game, MIT found themselves down 20-24, before staging a comeback to win 30-27. After that, the Engineers never looked back, winning the next two games fairly easily (30-20, 30-18) to win the match 3-0.

MIT stumbled in the first game against Wheaton College 29-31 after failing to convert the first game point. MIT gathered themselves, however, to win the next three games (30-26, 30-22, 31-29) and the match 3-1.

In MIT's final match of the day, MIT faced the hosts, Gordon College. Steady play by the Engineers throughout the match produced another 3-0 win (30-23,

30-18, 33-31), and earned MIT the tournament trophy. Middle hitter, Lauren E. Frick '03 dominated the net in the final match, getting six kills and six blocks.

Throughout the day, it was the steady play of right side hitter Barbara J. Schultze '02 and outside hitter Amy W. Mok '02 that proved too powerful for opponents to overcome. Also, outside hitter Nydia M. Clayton '04 found ways to punish the opposition, posting 9, 16, and 14 kills respectively in each match.

However, it was setter Christina Almodovar '02 and middle hitter Kelly A. Martens '03 who stole the show, as Almodovar earned All-Tournament Team honors and Martens earned the tournament's Most Valuable Player award. Martens' performance also earned her the New England Women's and Men's Athletic Conference Player of the Week award.

MIT now enters their conference schedule with a 6-1 record under their belt. The Engineers will face Mt Holyoke College on Saturday in DuPont Gymnasium at 1:00 p.m.

UPCOMING HOME EVENTS

Saturday, September 15

Men's Soccer vs. Rhode Island College, 1:00pm

Women's Volleyball vs. Mt. Holyoke, 1:00pm

Field Hockey, Alumnae Game, 1:00pm

Women's Soccer, Alumnae Game, 4:30pm

Thursday, September 20

Women's Soccer vs. Bridgewater State, 4:30pm



Tennis Starts Season With Flawless Win

Tech Defeats Wheaton, 9-0

By Caroline Tien
TEAM MEMBER

The MIT Women's Tennis Team began their season with a 9-0 flawless win last Saturday. Wheaton proved to be no match for this seemingly invincible team of girls, who did not drop any sets.

The beautiful Saturday afternoon was favorable to the MIT women as they quickly took the lead, winning at all of their doubles matches. Julie J. Koo '03 and Larisa M. Egloff '04 overpowered their opponents on the court with an 8-3 victory.

Shima Rayej '03 and Ann Hsing '02 swept through their match with an 8-2 win at second doubles. Caroline Tien '04 and newcomer Jaclyn E. Cichon '05 also shut out their opponents 8-1. At fourth doubles, Jessica Hall '02 and Jennifer A. Hipp '04 lost only one game.

"This was a good start for us," said Coach Carol Matsuzaki. "We did well implementing the things we've been working on in doubles. Doubles should be a strength for us this year if we keep working hard at it."

Eager to win her singles match, Koo used aggressive groundstrokes to win 6-2, 6-2. Similarly, Rayej showed the same toughness with a 6-0, 6-3 win.

At third singles Egloff decisively blew her opponent away with a 6-2, 6-2 victory. On the next courts over, Tien and Hall showed no mercy, with 6-1, 6-1 and 6-0, 6-1 wins.

While Hipp faced a tough 7-5 first set, she easily won the next set 6-1. Likewise, although Cichon sweated through a 6-4 win in the first set, her 6-2 victory in the second set was a breeze. Alongside her, Hsing pulled out a quick 6-3, 6-2 win, and Ruby J. Pai '04 had a clean 8-1 pro-set victory, despite her sprained ankle.

As the women's tennis team enters their packed fall season, visions of another New England Women's and Men's Athletic Conference title optimistically float through each of their minds. This Friday, September 14, they will head off to Babson in the hopes of another win and on Saturday they will battle it out with Smith College on the MIT home tennis courts.

Estrada Wins Prize, Soccer Team Shines

By Roger F. Crosley
DIRECTOR OF SPORTS INFORMATION

Cristina Estrada '01, the 2000-2001 women's basketball most valuable player, was named winner of a

Sports Shorts

prestigious National Collegiate Athletic Association Postgraduate

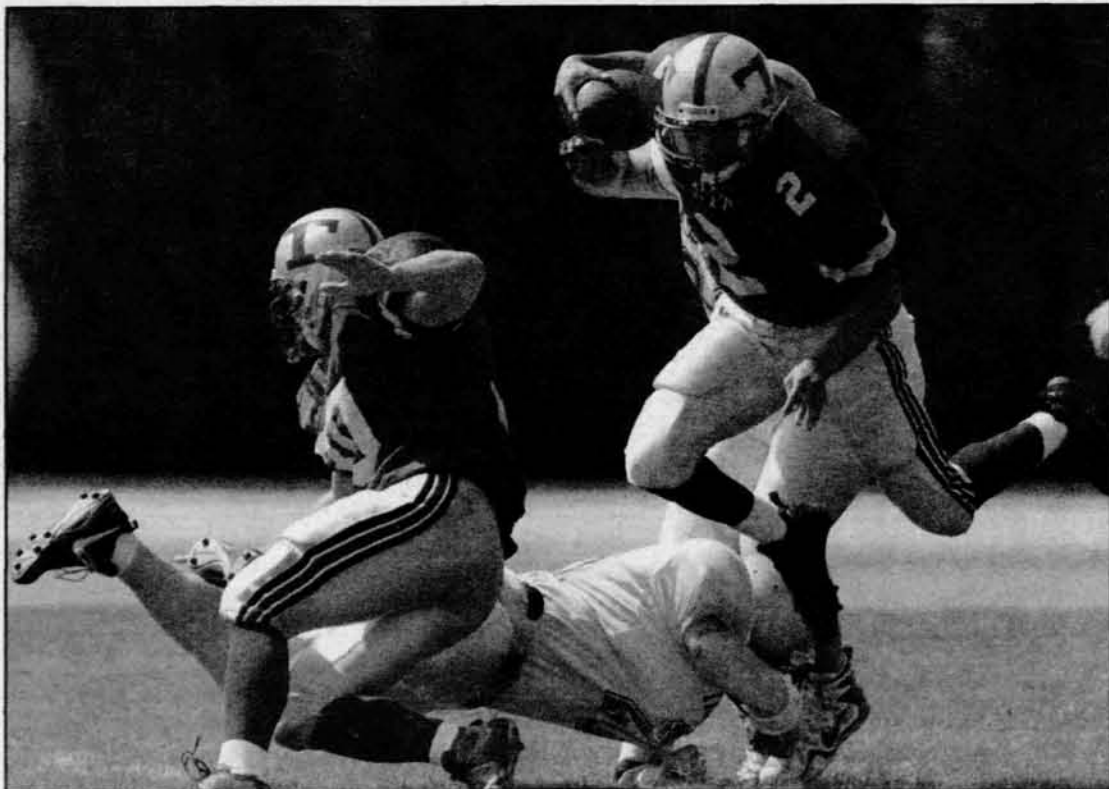
Scholarship. Estrada is one of only six Division III women's basketball players nationwide to receive the honor.

Philip M. Deutsch '04, a quarterback, was named to the New England Football Conference Weekly Honor Roll for his play in the Engineers' 29-12 victory over Mass Maritime Academy. Deutsch completed 12 of 19 passes for 167

yards and ran for 57 more yards and a touchdown to lead the MIT to its first victory ever over the Buccaneers. The Engineers rushed for 269 yards in the game. It was the highest rushing total for the team since October 19, 1996 in a victory over Curry College.

For the first time in the history

Sports Shorts, Page 23



Quarterback Philip M. Deutsch '04 dodges a tackle from a Mass Maritime player during the 29-12 win on Saturday. Deutsch completed 12 of 19 passes for 167 yards and ran for 57 yards to a touchdown.